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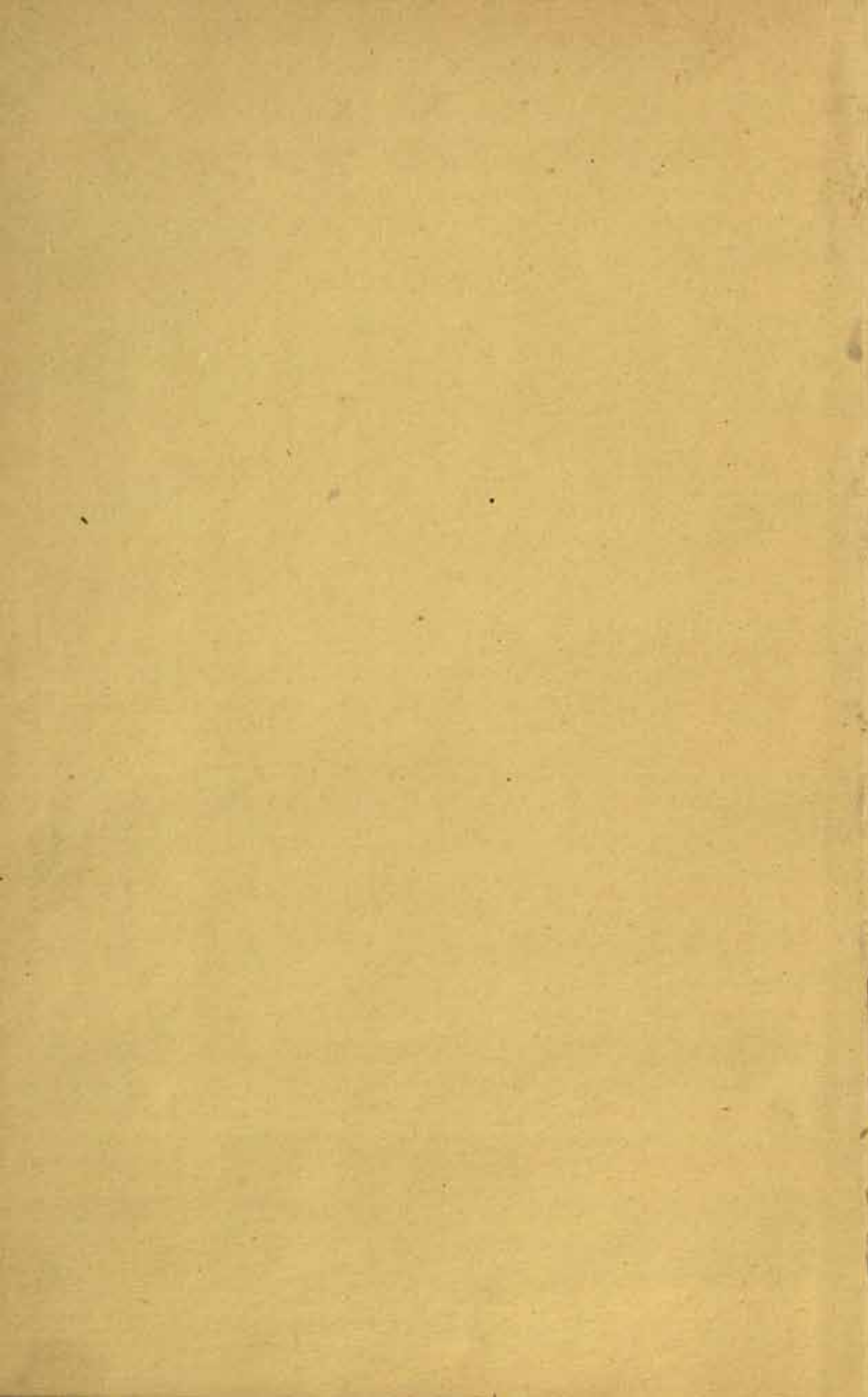
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ERRATA.

Page 182, line 11, for *father's father's* read *father's father*.

Plate IV, for *Tabu* read *Talu*.

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 1913 Hill, R. Gordon, Esq., M.R.C.S., L.R.C.P., 10 *Castle Street, Farnham.*
 1906 Hilton-Simpson, Melville W., Esq., F.R.G.S., *The Museum, Oxford.*
 1909 Hocart, A. M., Esq., *Lakeba, Fiji; c/o A. H. Hocart, Esq., 9 Greenlaw Avenue, Paisley.*
 1906 Hodges, F. W., Esq., *H.M. Patent Office, 25 Southampton Buildings, W.C.*
 1909 Hodgson, G. F., Esq., Assistant District Commissioner, *S. Nigeria.*
 1906 Hodson, T. C., Esq., SECRETARY, 10 *Wood Lane, Highgate, N. (¶§)*
 1899 Holdich, Col. Sir T. Hungerford, R.E., K.C.M.G., K.C.I.E., C.B., Sc.D., 41 *Courtfield Road, S.W. (¶)*
 1901 Hollis, A. C., Esq., C.M.G., *Hill Station, Freetown, Sierra Leone. (¶)*
 1910 Holmes, Harold, Esq., *Cherryford-in-Martinhoe, Parracombe, N. Devon.*
 1881 Holmes, T. V., Esq., F.G.S., 28 *Croom's Hill, Greenwich, S.E. (¶)*
 1913 Hooton, E. A., Esq., Ph.D., *Peabody Museum, Harvard University, Cambridge, Mass., U.S.A.*
 1894 Horsley, Sir Victor, F.R.S., F.R.C.S., 25 *Cavendish Square, W.*

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- 1902 Houghton, B., Esq., *Sagaing, Upper Burma.*
- 1896 Howorth, Sir Henry H., K.C.I.E., D.C.L., F.R.S., F.S.A., 30 *Collingham Place, Earl's Court.* (¶)
- 1879 Hügel, Baron A. von, 53 *Barton Road, Cambridge.* (¶)
- 1912 Hunt, Walter, Esq., 3 *Westcote Road, Streatham, S.W.*
- 1898 Hutchinson, Rev. H. Neville, 17 *St. John's Wood Park, Finchley Road, N.W.*
- 1912 Hutchinson, W., Esq., B.A., F.R.G.S., F.Z.S., 34-36 *Paternoster Row, E.C.*
- 1913 Hutton, J. H., Esq., L.C.S., Assistant Commissioner, *Mokokchung, Naga Hills, Assam, India.*
- 1898 Iles, George, Esq., c/o *Public Library, Ottawa, Canada.* (*)
- 1863 Jackson, Henry, Esq., O.M., Litt.D., M.A., F.B.A., Regius Professor of Greek in the University of Cambridge, *Trinity College, Cambridge.* (*)
- 1912 Jackson, H. C., Esq., *Sudan Civil Service, Impens, North Petherton, Somerset.*
- 1910 James, Rev. W. Cory, M.A., *East Grove, Rhayader, Radnorshire.*
- 1872 Jeaffreson, W. J., Esq., M.A. (*)
- 1869 Jeffery, F. J., Esq. (*)
- 1913 Jelf, Arthur, Esq., *Bushley, 80 Woodstock Road, Oxford.*
- 1908 Jervoise, S. P. V., Esq., Assistant Collector, *Entebbe, Uganda.*
- 1885 Johnston, Sir H. H., G.C.M.G., K.C.B., D.Sc., F.Z.S., *St. John's Priory, Poling, Arundel.* (¶)
- 1901 Johnstone, H. B., Esq., B.A., H.B.M. Vice-Consul, *Mogador, Morocco.*
- 1907 Jonas, H. C., Esq., M.D., *Boutport Street, Barnstaple, N. Devon.*
- 1914 Jones, H. Sefton, Esq., 18 *Bedford Square, W.C.*
- 1910 Jones, F. W., Esq., *School of Medicine for Women, 8 Hunter Street, Brunswick Square, W.C.*
- 1902 Joyce, T. A., Esq., M.A., VICE-PRESIDENT, *British Museum, W.C.*; 119 *Melrose Avenue, Willesden Green, N.* (¶§)
- 1905 Joyce, T. Heath, Esq., *Whitefriars, Nettlecombe Avenue, Southsea.*
- 1907 Judge, James J., Esq., 15, *Hill Park Crescent, Plymouth.*
- 1913 Julian, Mrs. Hester, *Redholme, Torquay.*
- 1896 Keith, A., Esq., M.D., F.R.C.S., LL.D., F.R.S., PRESIDENT, Conservator of the Museum, Royal College of Surgeons; 17 *Aubert Park, Highbury, N.* (¶§)
- 1911 Khan, S. S., Esq., *Medical College, Lucknow, India.*
- 1911 Kidd, Dr. A. E., 10 *Prospect Place, Dundee.*
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- 1911 Kirkpatrick, W., Esq., *P.O. Box 46, Calcutta, India.*
- 1891 Kitts, Eustace John, Esq., *Eversleigh, Heene, Worthing.* (*)
- 1902 Kloss, Cecil B., Esq., F.Z.S., *Kuala Lumpur, Federated Malay States.*

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- 1914 Knight, Captain C. Morley, *Naval and Military Club, Piccadilly, W.*
- 1909 Knowles, F. H. S., Esq., M.A., *3 Moreton Road, Oxford.*
- 1881 Knowles, W. J., Esq., *Flixton Place, Ballymena, Co. Antrim. (¶)*
- 1913 Landtmann, Dr. Gunnar, *Kenmore House, Cambridge.*
- 1905 Large, R. Emmott, Esq., *1 Verulam Buildings, Gray's Inn, W.C.*
- 1888 Law, Walter W., Esq., *Scarborough, New York, U.S.A. (*)*
- 1885 Lawrence, E., Esq., *Kama, Sunningdale Avenue, Chalkwell Park, Leigh-on-Sea, Essex. (*)*
- 1902 Layard, Miss Nina F., *Rookwood, Fonnereau Road, Ipswich. (¶)*
- 1904 Lennox, D., Esq., M.D., *Tayside House, 162 Nethergate, Dundee. (*)*
- 1909 Leveson, H. G. A., Esq., M.R.A.S., F.R.G.S., *East India United Service Club, St. James's Square, S.W.; c/o T. Cook and Sons, Rangoon. (§)*
- 1866 Lewis, A. L., Esq., F.C.A., *Officier d'Académie, 35 Beddington Gardens, Wallington, Surrey. (¶¶)*
- 1893 Longman, Charles James, Esq., M.A., *27 Norfolk Square, W. (*)*
- 1884 Macalister, Alexander, Esq., M.D., F.R.S., *Professor of Anatomy in the University of Cambridge, PAST PRESIDENT (1893-95), Torrisdale, Cambridge. (¶§)*
- 1901 Mace, A., Esq., *166 W. 74th Street, New York.*
- 1913 MacGregor, G. Laird, Esq., I.C.S., *c/o Messrs. Grindlay & Co., 84 Parliament Street, S.W.*
- 1909 MacGregor, Rev. J. K., B.D., *Hope Waddell Institute, Calabar, W. Africa. (¶)*
- 1899 MacIver, David Randall, Esq., M.A., D.Sc., F.S.A., F.R.G.S., *The Geographical Society, Broadway, at 156th Street, New York, U.S.A.*
- 1904 Mackay, J., Esq., *Craig-ard, Farecliffe Road, Bradford.*
- 1910 Mackintosh, J. S., Esq., *Platt's Lane, Hampstead, N.W.*
- 1899 MacLagan, R. C., Esq., M.D., *5 Coates Crescent, Edinburgh.*
- 1908 MacMichael, H. A., Esq., *Deputy Inspector, Sudan Civil Service, Omdurman, Sudan; 11 Parkside, Cambridge (¶)*
- 1885 MacRitchie, David, Esq., F.S.A. Scot., *4 Archibald Place, Edinburgh. (¶)*
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- 1881 Man, E. H., Esq., C.I.E., *St. Helen's, Preston Park, Brighton. (¶)*
- 1913 Mann, F. W., Esq., *Devonshire Club, St. James's Street, S.W.*
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- 1892 March, H. Colley, Esq., M.D., *Portesham, Dorchester. (¶¶)*
- 1896 Marett, R. R., Esq., M.A., D.Sc., *Reader in Anthropology in the University of Oxford, Exeter College, Oxford; Westbury Lodge, Norham Road, Oxford. (¶¶)*

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Election.

- 1909 Marshall, J. H., Esq., M.A., Litt.D., C.I.E., F.S.A., Director General of the
Archæological Survey of India, *Bennore, Simla.*
- 1905 Marten, R. H., Esq., M.D., 12 *North Terrace, Adelaide, South Australia.*
- 1868 Martin, Sir Richard Biddulph, Bart., M.A., F.R.G.S., VICE-PRESIDENT,
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- 1910 McDougall, William, Esq., M.A., *Wood's End, Foxcombe Hill, Oxford. (¶)*
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6 *Brunswick Square, W.C. (*¶)*
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- 1904 Melland, Frank H., Esq., *Livingstone, Northern Rhodesia.*
- 1908 Merivale, Reginald, Esq., 11 *New Square, Lincoln's Inn, W.C.*
- 1877 Messer, A. B., Esq., M.D., Inspector-General of Hospitals and Fleet,
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- 1908 Milton, J. H., Esq., *Harrison House, College Avenue, Crosby, Liverpool.*
- 1914 Moir, J. Reid, Esq., F.G.S., 12 *St. Edmund's Road, Ipswich.*
- 1906 Morison, A., Esq., *Mombasa, British East Africa.*
- 1913 Morley, Bernard, Esq., *Cable Station, Labuan.*
- 1870 Morrison, Walter, Esq., M.A., 77 *Cromwell Road, S.W. (*)*
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- 1885 Munro, R., Esq., M.A., M.D., LL.D., F.R.S.E., *Elmbank, Largs, Ayrshire,
N.B. (*¶)*
- 1871 Murray, Adam, Esq., F.G.S. (*)
- 1911 Murray, G. W. W., Esq., 19 *Kingsburgh Road, Murrayfield, Edinburgh;
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- 1910 Murray, Reginald, Esq., 12 *Bedford Row, W.C.*
- 1905 Musgrove, J., Esq., M.D., Bute Professor of Anatomy, *The University,
St. Andrews, N.B.*
- 1875 Muspratt, Edmund K., Esq., F.C.S., 5 *Windsor Buildings, George Street,
Liverpool.*
- 1896 Myers, C. S., Esq., M.A., M.D., *Galewood Tower, Great Shelford, near
Cambridge. (¶*§)*
- 1909 Myers, Henry, Esq., *The Long House, Leatherhead.*

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- 1893 Myres, J. L., Esq., M.A., F.S.A., F.R.G.S., Wykeham Professor of Ancient History in the University of Oxford, Corr. Member Anthropol. Soc., Paris, 101 *Banbury Road, Oxford.* (*¶)
- 1903 Myres, Miss J. L., c/o Professor J. L. Myres, 101 *Banbury Road, Oxford.* (*)
- 1913 Newhall, D. V., Esq., B.A., *Lincoln College, Oxford.*
- 1898 Newton, Wm. M., Esq., 96 *Wood Street, E.C.* (¶)
- 1909 Nicholls, B. E., Esq., *Brownings, Billingshurst.*
- 1910 Noel, Miss Emilia F., 37 *Moscow Court, W.*
- 1913 Nuttall, T. E., Esq., M.D., F.G.S., J.P., *Middleton, Huncoat, Accrington.*
- 1906 O'Brien, Major A. J., C.I.E., Deputy Commissioner, *Shahpur, Punjab.*
- 1906 Oke, Alfred William, Esq., B.A., LL.M., F.S.A., F.G.S., F.L.S., *Orielton, Highfield Lane, Southampton; 32 Denmark Villas, Hove.* (*)
- 1905 Oldman, W. O., Esq., 77 *Brixton Hill, S.W.*
- 1914 O'Malley, S., Esq., *Pyrford Lodge, West Byfleet, Weybridge.*
- 1913 Outes, Dr. Felix F., *Museum of Natural History, Peru Street, No. 208, Buenos Ayres, Argentine Republic.*
- 1909 Page, John William, Esq., 8 *Gunton Road, Upper Clapton, N.E.*
- 1906 Palmer, Herbert Richmond, Esq., B.A., LL.B., F.R.G.S., Barrister-at-Law, *Kirkby Lonsdale, Westmoreland; Zungeru, Northern Nigeria.* (¶)
- 1870 Parker, W. M., Esq. (*)
- 1898 Parkin, Wm., Esq., *The Mount, Sheffield.*
- 1906 Parkinson, John, Esq., *The Dene, Great Shelford, Cambridge.* (¶)
- 1906 Parkyn, E. A., Esq., M.A., 1 *St. Mark's Crescent, N.W.*
- 1904 Parsons, F. G., Esq., F.R.C.S., *St. Thomas' Hospital, S.E.* (¶)
- 1891 Partington, J. Edge-, Esq., *Wyngates, Burkes Road, Beaconsfield, Bucks.* (¶§)
- 1903 Partridge, Charles, jun., Esq., M.A., F.S.A., F.R.G.S., District Commissioner, *Lagos, S. Nigeria; Stowmarket, Suffolk.*
- 1913 Passmore, A. D., Esq., *Wood Street, Swindon, Wilts.*
- 1891 Paterson, A. M., Esq., M.D., Professor of Anatomy, *The University, Liverpool.*
- 1909 Patten, C. J., Esq., M.A., M.D., Sc.D., Professor of Anatomy, *The University, Sheffield.*
- 1907 Peabody, Dr. Charles, *Peabody Museum, Harvard University, Cambridge, Mass., U.S.A.*
- 1911 Peak, H. J. E., Esq., *Westbrooke House, Newbury, Berks.*
- 1903 Pearson, Karl, Esq., F.R.S., Professor of Applied Mathematics, *University College, London; 7 Well Road, Hampstead, N.W.* (¶)
- 1891 Peek, The Hon. Lady, 48 *Grosvenor Gardens, S.W.; Widworthy Court, Devon.*

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- 1902 Peele, W. C., Esq., *Dogpole, Shrewsbury.*
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- 1912 Peter, Thurstan, Esq., *Town Hall, Redruth, Cornwall.*
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- 1912 Porter, Captain G. Fortescue, *Kohima, Naga Hills, Assam.*
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- 1907 Pycraft, W. P., Esq., A.L.S., *British Museum (Natural History), Cromwell Road, S.W.*
- 1904 Quick, A. S., Esq., HON. COUNSEL, *123 Loughborough Park, S.W.*
- 1907 Quiggin, Mrs. Hingston, M.A., *88 Hartington Grove, Cambridge. (*)*
- 1909 Quinnell, Roland, Esq., *Deubrook, Blackboys, Sussex; c/o Messrs. Bannister, Ram and Fache, 13 John Street, Bedford Row, W.C.*
- 1868 Ransom, Edwin, Esq., F.R.G.S., *24 Ashburnham Road, Bedford. (*)*
- 1907 Rattray, R. S., Esq., *101 Piccadilly, W.; Assistant District Commissioner, Ashanti.*
- 1883 Ravenstein, Ernest G., Esq., F.R.G.S., *2 York Mansions, Battersea Park, S.W. (*)*
- 1912 Ray, M. Burrow, Esq., M.D., *6 Ripon Road, Harrogate.*
- 1890 Ray, Sidney H., Esq., M.A., *218 Balfour Road, Ilford. (¶§)*
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- 1875 Read, Sir C. Hercules, Hon. LL.D., P.S.A., PAST PRESIDENT (1899-1901), Keeper of British and Mediæval Antiquities and Ethnography, *British Museum, Bloomsbury, W.C. (¶¶)*
- 1906 Reddie, C. S., Esq., *Kismayu, British East Africa.*
- 1886 Reid, Robert William, Esq., M.D., Professor of Anatomy in the University of Aberdeen, *37 Albyn Place, Aberdeen. (¶)*
- 1863 Renshaw, Charles J., Esq., M.D., *Ashton-on-Mersey, Manchester. (*)*
- 1913 Richards, J. F., Esq., M.A., I.C.S., F.R.A.S., *Charnwood House, Portland Street, Leamington Spa.*
- 1914 Ridge, Percy B., Esq., M.D., *King's College Hospital, Denmark Hill, S.E.*
- 1902 Ridge, W. Sheldon, Esq., B.A., F.G.S., F.R.G.S., *Shanghai, China.*

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- 1901 Ridgeway, W., Esq., M.A., Sc.D., F.B.A., Hon. LL.D., Hon. Litt.D., PAST-PRESIDENT (1908-10), Disney Professor of Archaeology and Brereton Reader in Classics in the University of Cambridge, Hon. Member Anthropol. Soc. Brussels, Hon. Member Deutsche Gesellschaft für Anthropologie, *Caius College, Cambridge*; *Fen Ditton, Cambridge*. (§¶)
- 1893 Rigg, Herbert, Esq., M.A., K.C., J.P., F.S.A., *Wallhurst Manor, Cowfold, Horsham*.
- 1900 Rivers, W. H. R., Esq., M.D., F.R.S., *St. John's College, Cambridge*. (§§)
- 1913 Roberts, J. E. H., Esq., F.R.C.S., M.B., B.S. (London), 15 *Devonshire Place, W.*
- 1902 Robinson, H. C., Esq., *Holmfield, Aigburth, Liverpool*; *Selangor State Museum, Kuala Lumpur, Fed. Malay States*. (§)
- 1912 Roscoe, Rev. J., *Ovington Rectory, Watton, Norfolk*.
- 1901 Rose, H. A., Esq., c/o *Grindlay, Groom and Co., Bombay*. (§)
- 1911 Rose, H. J., Esq., M.A., 840 *Lorne Crescent, Montreal, Canada*.
- 1882 Roth, Henry Ling, Esq., *Briarfield, Shilden, Halifax*. (§)
- 1882 Rothschild, Hon. Nathaniel C., *Arundel House, Kensington Palace Gardens, W.* (*)
- 1904 Routledge, W. Scoresby, Esq., M.A., *Ewers, Bursledon, Southampton*; 19 *Wilton Street, Belgrave Square, S.W.* (§)
- 1871 Rudler, F. W., Esq., I.S.O., F.G.S., PAST PRESIDENT (1898-99), Corr. Member Anthropol. Soc., Paris, *Ethel Villa, Tatsfield, Westerham*. (§§)
- 1913 Rutherford, N. C., Esq., M.D., *Frith Manor, Mill Hill, Middlesex*.
- 1913 Sabine, C. L., Esq., *Willowbrook, Hampton Hill, Middlesex*.
- 1905 Salaman, C., Esq., *Little Odell, near Minchew, Somerset*.
- 1863 Salting, W. S., Esq., F.R.G.S. (*)
- 1902 Sanday, Canon W. W., D.D., F.B.A., Margaret Professor of Divinity in the University of Oxford, *Christ Church, Oxford*.
- 1886 Sarawak, H.H. the Rane of, *Grey Friars, Ascot*.
- 1876 Sayce, Rev. A. H., M.A., LL.D., Professor of Assyriology in the University of Oxford, *Queen's College, Oxford*. (§¶)
- 1900 Seligmann, Charles G., Esq., M.D., 36 *Finchley Road, N.* (§§)
- 1885 Seton-Karr, H. W., Esq., 8 *St. Paul's Mansions, Hammersmith*. (§)
- 1908 Shakespeare, Lieut.-Col. J., C.I.E., D.S.O., *Imphal, Manipur State, Assam*. (§)
- 1866 Shaw, Lieut.-Colonel F. G., *Heathburn Hall, Riverstick, Ballinhassig, R.S.O., Co. Cork*. (*)
- 1911 Sherren, J., Esq., F.R.C.S., 6 *Devonshire Place, W.*
- 1898 Shrubsall, Frank Charles, Esq., M.A., M.D., 34 *Lime Grove, Uzbridge Road*. (§¶)
- 1901 Skeat, W. W., Esq., M.A., *Morden, Rustington, near Littlehampton*. (§§)
- 1911 Smallbones, R. T., Esq., *British Vice-Consul, St. Paul de Loanda, Portuguese W. Africa*.

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- 1909 Smith, Rev. E. W., *Baila-Batonga Mission, Kasenga, N.W. Rhodesia (via Kalomo)*.
- 1910 Smith, G. Elliot, Esq., M.A., M.D., F.R.S., Professor of Anatomy in the University of Manchester, Hon. Member Anthropol. Soc. Paris, Munich, Rome, VICE-PRESIDENT; *The University, Manchester*. (§)
- 1865 Smith, Worthington G., Esq., F.L.S., 121 *High Street South, Dunstable*. (¶)
- 1907 Smith, W. Ramsay, Esq., D.Sc., M.B., Permanent Head, Health Department; *Adelaide, South Australia*.
- 1905 Smurthwaite, T. E., Esq., 134 *Mortimer Road, Kensal Rise, N.W.*
- 1907 Solano, E. J., Esq., 4 *Park Lane, W.*
- 1910 Sollas, W. J., Esq., M.A., Sc.D., LL.D., F.R.S., Professor of Geology in the University of Oxford, 173 *Woodstock Road, Oxford*.
- 1893 Somerville, Captain Boyle T., R.N., *Hydrographic Department, Admiralty, S.W.* (¶)
- 1913 Spence, Lewis, Esq., 6 *Sylvan Place, Edinburgh*.
- 1909 Spencer, Captain L. D., Egyptian Army, *Wau, Khartoum, Sudan; Army and Navy Club, Pall Mall, S.W.* (*)
- 1913 Spearing, H. G., Esq., 5 *Hornsey Lane Gardens, Highgate, N.*
- 1908 Stannus, H. S., Esq., M.B., *Zomba, Nyassaland; Savile Club, W.*
- 1913 Stefánsson, V., Esq., *Canadian Arctic Expedition, The Navy Yard, Esquimault, British Columbia*.
- 1880 Stephens, Henry Charles, Esq., F.L.S., F.G.S., F.C.S., *Cholderton, Salisbury*. (*)
- 1911 Stigand, Capt. C. N., *Rejaf, Sudan (via Khartoum)*.
- 1913 Stolyhwo, Dr. K., *Pracownia Antropologiczna; Warsaw ul Kaliksta 8*.
- 1911 Strachan, W. H. W., Esq., L.R.C.P., M.R.C.S., F.L.S., F.Z.S., C.M.G., c/o *Cox and Co., 16 Charing Cross, W.*
- 1883 Streeter, E. W., Esq., F.R.G.S., F.Z.S., 49 *Compayne Gardens, Hampstead N.W.* (*)
- 1903 Strong, W. M., Esq., M.A., B.C., 3 *Champion Park, Denmark Hill*.
- 1908 Stubbs, W. W., Esq., Assistant District Commissioner, *Lagos*.
- 1909 Sundar, Donald H. E., Esq., Commissioner of the Sundarbans, c/o *Messrs. Grindlay and Co., Hastings Street, Calcutta*.
- 1902 Sykes, Major P. Molesworth, C.M.G., H.B.M. Consul-General, *Meshed, N.E. Persia; 4 Lyall Street, Belgrave Square, W.* (¶¶)
- 1899 Tabor, Charles James, Esq., *White House, Knott's Green, Leyton, Essex*.
- 1911 Tagliaferro, Professor N., I.S.O., 82 *Strada Teatro, Malta*.
- 1905 Talbot, P. A., Esq., *The Cottage, Abbot's Morton, Worcestershire; Eket, near Calabar, S. Nigeria*.
- 1906 Tangye, Sir Harold, Bart., 12 *Old Burlington Street, W.*
- 1906 Tata, D. J., Esq., c/o *Jeremiah Lyon and Co., 4 Lombard Court, E.C.*
- 1906 Tata, R. J., Esq., c/o *Jeremiah Lyon and Co., 4 Lombard Court, E.C.*

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- 1892 Taylor, Frederick, Esq. (*)
- 1912 Temple, Mrs., c/o Mrs. Hubert Walter, 50 Cadogan Place, S.W.
- 1879 Temple, Lieut.-Colonel Sir R. C., Bart., C.I.E., *The Nash, Worcester.* (¶)
- 1905 Tench, Miss Mary F. A., 4 Avonmore Gardens, W.
- 1881 Thane, George Dancer, Esq., Professor of Anatomy in University College, London, *University College, Gower Street, W.C.* (**¶)
- 1904 Thomas, N. W., Esq., M.A., Corr. Mem. Soc. d'Anthrop. Paris; *Egwoba, Manor Gate Road, Norbiton; Freetown, Sierra Leone.*
- 1884 Thomas, Oldfield, Esq., F.R.S., F.Z.S., 15 *St. Petersburg Place, Bayswater Hill, W.* (*¶)
- 1904 Thompson, H. N., Esq., c/o *H. S. King and Co., 9 Pall Mall, S.W.*
- 1890 Thomson, Arthur, Esq., M.A., M.B., Professor of Human Anatomy in the University of Oxford, *The Museum, Oxford.* (¶)
- 1882 Thurn, Sir Everard F. im, K.C.M.G., C.B., 39 *Lexham Gardens, W.* (¶§).
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- 1899 Tocher, James F., Esq., B.Sc., F.I.C., *Crown Mansions, 41½ Union Street, Aberdeen.* (¶)
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- 1912 Turnbull, A. H., Esq., *Wellington, New Zealand.*
- 1911 Turner, G. A., Esq., M.B., D.Ph., Medical Officer, Witwatersrand Native Labour Association, *P.O. Box 1198, Johannesburg, Transvaal.*
- 1889 Turner, Sir William, K.C.B., M.B., LL.D., D.C.L., F.R.S., F.R.S.E., Principal of the University of Edinburgh, 6 *Eton Terrace, Edinburgh.* (¶)
- 1867 Tylor, Sir Edward Burnett, D.C.L., LL.D., F.R.S., PAST PRESIDENT (1879-81, 1891-93), Professor Emeritus of Anthropology in the University of Oxford, *Linden, Wellington, Somerset.* (¶§)
- 1891 Tylor, Lady, *Linden, Wellington, Somerset.*
- 1911 Uganda, the Right Rev. the Bishop of, *Uganda.*
- 1913 Upward, Allen, Esq., 40 *Clevedon Mansions, Highgate Road, N.W.*
- 1910 Vellenoweth, Miss L., 41, *Knatchbull Road, Camberwell, S.E.*
- 1912 Vickers, Douglas, Esq., *Chapel House, Charles Street, Mayfair, W.*

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- 1911 Vischer, Hans, Esq., Director of Education, *S. Nigeria*.
- 1902 Visick, H. C., Esq., M.D., 29 *Brownswood Park, Green Lanes, N.*
- 1891 Waddell, Lt.-Col. L. A., C.B., C.I.E., LL.D., *The Deodars, Park Drive, Hampstead, N.W. (*¶§)*
- 1901 Waddington, S., Esq., B.A., 15 *Cambridge Street, Hyde Park, W.*
- 1905 Walker, Basil Woodd, Esq., M.D., 6 *Dawson Place, Pembroke Square, W.*
- 1912 Waller, Rev. C. L., 37 *Camperdown, Great Yarmouth.*
- 1902 Warren, S. Hazzledine, Esq., F.G.S., *Sherwood, Loughton, Essex. (¶§)*
- 1908 Waterston, David, Esq., M.D., Professor of Anatomy, *King's College, London, W.C. (¶)*
- 1913 Watkins, O. F., Esq., c/o *Administration, Nairobi, British East Africa.*
- 1907 Welch, H. J., Esq., HON. SOLICITOR, 9 *Homefield Road, Bromley, Kent.*
- 1907 Wellcome, Henry S., *Snow Hill Buildings, Holborn, E.C.*
- 1912 Wells, S., Esq., 32 *Oakholme Road, Sheffield.*
- 1905 Westermarck, E., Esq., Ph.D., Professor of Sociology in the University of London, 8 *Rockley Road, West Kensington Park, W. (¶)*
- 1911 Westlake, E., Esq., F.G.S., 31 *Market Place, Salisbury.*
- 1910 Whiffen, Captain T. W., 14th *Hussars, United Service Club, S.W.; Ardwick, Sussex.*
- 1901 White, Franklin, Esq., *P.O. Box 669, Bulawayo. (¶)*
- 1907 White, James Martin, Esq., 1 *Cumberland Place, Regent's Park, N.W.*
- 1913 Williams, J. Leon, Esq., 30 *George Street, Hanover Square, W.; 84 Fellows Road, Hampstead, N.W.*
- 1912 Williams, R. J., Esq., *Ascalon, 37 Hill Avenue, Worcester.*
- 1910 Williams, S. H., Esq., L.D.S., R.C.S. (Eng.), 8 *Warrior Square, St. Leonards-on-Sea.*
- 1909 Williamson, R. W., Esq., M.Sc., TREASURER, *The Copse, Brook, near Witley, Surrey. (¶§)*
- 1913 Wiltshire, H. G., Esq., B.A., *King's College Hospital, Denmark Hill, S.E.*
- 1902 Windle, Sir Bertram C. A., M.A., D.Sc., F.R.S., *Queen's College, Cork.*
- 1869 Winwood, Rev. H. H., M.A., F.G.S., 11 *Cavendish Crescent, Bath.*
- 1906 Wray, Cecil, Esq., *Hillview, Grayshott, Haslemere, Surrey.*
- 1909 Wright, A. R., Esq., *H.M.'s Patent Office, Southampton Buildings, W.C.*
- 1911 Wright, Rev., F. G., *Cranbrook, London Road, Portsmouth.*
- 1903 Wright, W., Esq. M.B., D.Sc., F.R.C.S., F.S.A., *London Hospital, E.; Villa Candens, Vicarage Way, Gerrards Cross, Bucks. (¶*)*
- 1906 Young, Alfred Prentice, Esq., Ph.D., F.G.S., c/o *Grindlay and Co., 54 Parliament Street, S.W.*
- 1906 Yule, G. Udny, Esq., F.S.S., *St. John's College, Cambridge. (¶)*

Year of
Election.

AFFILIATED SOCIETIES [under By-Law IX].

- 1909 The Oxford University Anthropological Society, c/o R. R. Marett, Esq.,
M.A., Exeter College, Oxford.
1910 The Cambridge University Anthropological Club, *Cambridge.*
1912 The London School of Economics, *Clare Market, W.C.*

AFFILIATED MEMBER.

- 1914 Simpson, R. Harvey, Esq., *Brasenose College, Oxford.*

SOCIETIES, Etc., EXCHANGING PUBLICATIONS

WITH THE ROYAL ANTHROPOLOGICAL INSTITUTE.

GREAT BRITAIN AND IRELAND.

Dublin... Royal Dublin Society.
— Royal Irish Academy.
— Royal Society of Antiquaries.
Edinburgh... Royal College of Physicians.
— Royal Society of Edinburgh.
— Society of Antiquaries of Scotland.
Glasgow... Philosophical Society.
Liverpool... Institute of Tropical Research.
— University Institute of Archaeology.
London... African Society.
— British Medical Association.
— Folklore Society.
— Geologists' Association.
— Hellenic Society.
— India Office, Whitehall.
— Japan Society.

London... Nature.
— Palestine Exploration Fund.
— Quatuor Coronati Lodge, No. 2076.
— Royal Archaeological Institute.
— Royal Asiatic Society.
— Royal Colonial Institute.
— Royal Geographical Society.
— Royal Society.
— Royal Society of Literature.
— Royal Statistical Society.
— Royal United Service Institution.
— Society of Antiquaries.
— Society of Biblical Archaeology.
Taunton... The Somersetshire Archaeological Society.
Truro... Royal Institution of Cornwall.

EUROPE.

AUSTRO-HUNGARY.

Agram... Kroätische Archäologische Gesellschaft.
Budapest... Magyar Tudományos Akadémia.
— Magyar Nemzeti Néprajzi Östálya.
Cracow... Akademija Umiejetności.
Sarajevo... Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).
Vienna... Anthropologische Gesellschaft.
— K. Akademie der Wissenschaften.

BELGIUM.

Brussels... Académie Royale des Sciences.
— Collection de Monographies Ethnographiques.
— Instituts Solvay.
— Société d'Anthropologie de Bruxelles.
— Société d'Archéologie de Bruxelles.

DENMARK.

Copenhagen... Société des Antiquaires du Nord.

FRANCE.

Lyon... Société d'Anthropologie de Lyon.
Paris... L'Anthropologie.

Paris... École d'Anthropologie.
— Revue de l'Histoire des Religions.
— Soc. des Americanistes.
— Société d'Anthropologie.
— Année Sociologique.

GERMANY.

Berlin... Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
— K. Museum für Völkerkunde.
— Seminar für Orientalische Sprachen.
Brunswick... Zentralblatt für Anthropologie, etc.
Cologne... Rautenstranch-Joest-Museum.
Giessen... Hessische Blätter
Gotha... Petermann's Mittheilungen.
Halle-a-d-Saale... Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
— Deutsche Morgenländische Gesellschaft.
Kiel... Anthropologischer Verein für Schleswig-Holstein.
Leipzig... Archiv für Religionswissenschaft.
— Archiv für Rassen und Gesellschaft Biologie.

Leipzig... Verein für Erdkunde.

— *Orientalisches Archiv.*

Munich... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.

Stuttgart... Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens... Ephemeris Archaeologikè.

— *Annual of the British School of Archaeology.*

ITALY.

Florence... Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.

Rome... Accademia dei Lincei.

— *Bullettino di Paletnologia Italiana.*

— *Società Romana di Antropologia.*

Turin... Archivio di Psichiatria.

NETHERLANDS.

Amsterdam... Koninklijke Akademie van Wetenschappen.

Haarlem... Publications of the Koloniaal Instituut, Amsterdam.

Leiden... Internationales Archiv für Ethnographie.

The Hague... Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

PORTUGAL.

Porto... Portugalia.

RUSSIA.

Dorpat... Publications of the University.

Helsingfors... Suomen Muinaismaistoyhistyksen Arkakauskirja (*Journal of the Finnish Archaeological Society*).

Moscow... Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.

St. Petersburg... Imper. Akademia Nauk.

SWEDEN.

Stockholm... Academy of Antiquities, National Museum.

— *Nordiska Museet.*

— *Ymer.*

Uppsala... Kungl. Universitetets Bibliotek

SWITZERLAND.

Neuchâtel... Soc. Neuchateloise de Géographie.

Zurich... Musée National Suisse.

AFRICA.

CAPE COLONY.

Cape Town... Royal Society of South Africa.

EGYPT.

Giza... Archaeological Survey of Nubia.

Khartum... Wellcome Laboratory Reports.

AMERICA

ARGENTINE.

La Plata... Museum.

BRAZIL.

Rio de Janeiro... Museu Nacional.

CANADA.

Ottawa... Royal Society of Canada.

Toronto... Canadian Institute.

UNITED STATES.

Berkeley, Cal.... University of California.

Cambridge, Mass.... Peabody Museum, Science.

Chicago... Field Museum.

New York... American Museum of Natural History.

— *Columbia University.*

Philadelphia... Free Museum of Science and Art (*University of Philadelphia, Department of Archaeology.*)

Michigan... American Antiquarian.

Washington... American Anthropologist. — *Bureau of Ethnology.*

— *Smithsonian Institution.*

— *United States Geological Survey.*

— *United States National Museum.*

Worcester, Mass.... American Journal of Psychology.

ASIA.

CHINA.

Shanghai... Royal Asiatic Society
(China branch).

INDIA.

Bombay... Anthropological Society.
— Indian Antiquary.

Calcutta... Bengal Asiatic Society.

Colombo... Royal Asiatic Society (Ceylon branch).

Rangoon... Burma Research Society.

Simla... Archaeological Reports.

JAPAN.

Tokio... Asiatic Society of Japan.

— Tokio-Daigaku (Imperial University).

JAVA.

Batavia... Bataviaasche Genootschap van
Kunsten en Wetenschappen.

PHILIPPINE ISLANDS.

Manila... Ethnological Survey of the
Philippine Islands.

SIAM.

Bangkok... National Library.

STRAITS SETTLEMENTS.

Singapore... Royal Asiatic Society
(Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu... Bernice Pauahi Bishop
Museum.

Melbourne... Royal Society of Vic-
toria.

New Plymouth, N.Z... Polynesian Society.

Sydney... Australian Museum.

Sydney... Australasian Association for
the Advancement of Science.

— Royal Society of New South
Wales.

Wellington, N.Z.... New Zealand Insti-
tute.

EXCHANGES FOR "MAN."

ENGLAND.

Colchester... Transactions of the Essex
Archæological Society.

Hull... The Naturalist.

Liverpool... Institute of Tropical Research.
— Journal of the Gypsy Lore Society.

London... Annals of Psychical Science.
— British Association.

— Church Missionary Review.

— Eugenics Review.

— Journal of the East India Association.
— Lancet.

— Reliquary and Illustrated Archæ-
ologist.

— Saga-Book of the Viking Club.

— Sociological Review.

— South American Missionary Society.

ARGENTINE.

La Plata... Museum.

AUSTRO-HUNGARY.

Budapest... Magyar Nemzeti Museum.

Kolozsvár... Dolgozatok.

Lecove (Lemberg)... Ludu.

Mödling... Anthropos.

Uh. Hradiště... Pravěk.

BELGIUM.

Brussels... Bulletin de la Société d'Études
Coloniales.

— Bull. de la Soc. Géographie.

— Instituts Solvay.

— La Revue Congolaise.

— Missions Belges.

Ghent... Volkskunde.

FRANCE.

Dax... Société de Borda.

Paris... La Nature.

— La Revue Préhistorique.

— L'Ethnographie.

— L'Homme Préhistorique.

— Revue des Études Ethnographiques.

— Revue des Traditions Populaires.

— Statistique Générale de la France.

GERMANY.

- Danzig*... West Preussisches Provincial-Museum.
Dresden... Bericht des Vereins für Erdkunde.
Frankfurt a/M.... Völker Museum.
Giessen... Hessische Blätter.
Gotha... Petermanns Mitteilungen.
Guben... Niederlausitzer Mittheilungen.
Hamburg... Museum für Völkerkunde.
Kiel... Mitteilungen des Anthropologischen Vereins in Schleswig-Holstein.
Munich... Correspondenzblatt.
 — Geographische Gesellschaft.
 — Prähistorische Blätter.
Nürnberg... Bericht der Natur-historischen Gesellschaft.

INDIA.

- Simla*... Archaeological Reports.

ITALY.

- Como*... Rivista Archeologica della Provincia de Como.
Naples... La Scienza Sociale.
Rome... Rivista Italiana di Sociologia.

NATAL.

- Pietermaritzburg* ... Museum.

NEW SOUTH WALES.

- Sydney*... Science of Man.

NORWAY.

- Trondhjem*, K. Norske Videnskabers Selskab.

PORTUGAL.

- Lisbon*... Archeologo Português.
Serpa... A Tradição.

RHODESIA.

- Bulawayo*... Proceedings of the Rhodesian Scientific Association.

RUSSIA.

- St. Petersburg*... Zhivaya Starina.

SWEDEN.

- Uppsala*... Kungl. Universitetets Bibliotek.

SWITZERLAND.

- Zürich*... Schweizerisches Archiv für Volkskunde.
 — Jahresbericht der Schweiz Gesellschaft für Urgeschichte.

SYRIA.

- Beyrouth*, Mélanges de la faculté orientale de l'Université de St. Joseph.

UNITED STATES.

- Andover, Mass.*... Phillips Academy (Dept. of Archaeology).
Berkeley, Cal. ... University.
Boston... American Journal of Archaeology.
Chicago... Open Court.
New York ... American Museum of Natural History.
 — Popular Science Monthly.
 — Science.
Philadelphia... Proceedings of American Philosophical Society.
Washington ... Bureau of American Ethnology.
 — Bureau of Manufactures.
 — Records of the Past.

SUBSCRIBERS TO PUBLICATIONS OF THE INSTITUTE.

- Barrow-in-Furness*. Public Library.
Birmingham. Central Free Library.
 — University Library.
Cincinnati. Public Library.
Liverpool. Free Museum.
London. Guildhall Library.
 — London Library.
Madras. Connemara Public Library.
Manchester. John Rylands Library.

- Manchester*. Free Reference Library.
Newcastle. Public Library.
New York. Cornell University.
Ottawa. Library of Parliament.
Oxford. Indian Institute.
Salford. Royal Museum.
Sheffield. University Library.
Tokyo. Imperial University.

JOURNAL
OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING,
JANUARY 21ST, 1913.

Dr. ALFRED P. MAUDSLAY, *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The CHAIRMAN appointed Messrs. A. L. LEWIS and NORMAN H. HARDY as scrutineers, and declared the ballot open.

The SECRETARY read the report of Council for 1912, which, on the motion of the CHAIRMAN, was approved unanimously.

The TREASURER read his Report for 1912, which, on the motion of the CHAIRMAN, was unanimously accepted.

The PRESIDENT then read his address, entitled "Recent Archæological Discoveries in Mexico," illustrated by lantern slides.

The SCRUTINEERS then handed in their report, and the following were declared to be duly elected as Officers and Council for 1913-14.

President.—A. Keith, Esq., M.A., LL.D.

Vice-Presidents.

T. A. Joyce, Esq., M.A.
Sir R. B. Martin, Bart., M.A.

W. H. R. Rivers, Esq., M.A., M.D.,
F.R.S.

Hon. Secretary.—T. C. Hodson, Esq.

Hon. Treasurer.—R. W. Williamson, Esq.

Council.

F. Corner, Esq., M.R.C.S.
Major R. L. Cummins, R.A.M.C.
M. L. Dames, Esq.
Sir A. J. Evans, M.A., D.Litt., F.R.S.,
F.B.A., F.S.A.
A. Gardiner, Esq., M.A.
R. J. Gladstone, Esq., M.D.
R. G. A. Leveson, Esq.
C. S. Myers, Esq., M.A., M.D.
R. H. Pye, Esq.
S. H. Ray, Esq., M.A.

Professor Carveth Read, M.A.
C. G. Seligmann, Esq., M.D.
W. W. Skeat, Esq., M.A.
Professor G. Elliot Smith, M.A.,
M.D., F.R.S.
Sir Everard im Thurn, K.C.M.G., C.B.
E. Thurston, Esq., C.I.E.
E. Torday, Esq.
S. Hazzledine Warren, Esq.
W. Wright, Esq., M.B., D.Sc.
G. Udny Yule, Esq., F.S.S.

The newly elected PRESIDENT was then installed, and after expressing thanks for his election, he proposed a vote of thanks to Dr. Maudslay, and requested him, in the name of the Institute, to allow his address to be printed in the *Journal*.

The HON. SECRETARY then resigned office.

ANNUAL REPORT FOR 1912.

The Council is happy to report another year of substantial progress, and is pleased to record the fact that the total membership reaches the figure of 508. The numerical gains and losses are expressed in the following table:—

| | 1 Jan., 1912. | Loss by death or resignation. | Since elected. | 1 Jan., 1913. |
|--------------------------|-----------------|----------------------------------|----------------|-----------------|
| Honorary Fellows ... | 43 | — | +1 | 44 |
| Corresponding Fellows... | 2 | -1 | — | 1 |
| Local Correspondents ... | 37 ¹ | -1 | — | 36 ² |
| Affiliated Societies ... | 2 | — | +1 | 3 |
| Affiliated Members ... | 2 | -2 | +3 | 3 |
| Ordinary Fellows :— | | | | |
| Compounding... .. | 75 | -4 | — | 71 |
| Subscribing | 355 | -29 | +31 | 357 |
| Total (ordinary) ... | 430 | -33 | +31 | 428 |
| Total Membership ... | 508 | -37 | +36 | 508 |

¹ Of these 8 are also Ordinary Fellows.

² Of these 7 are also Ordinary Fellows.

Among the losses that the Institute has suffered through death are Rev. R. A. Bullen, F. Braby, Miss M. C. Ffennell, J. Gray, Dr. A. H. Keane and Andrew Lang.

Mr. F. Braby was one of our oldest Fellows, having joined the Ethnological Society in 1865 and having been a Fellow of the Institute from its foundation.

In Mr. John Gray the Institute has suffered a very severe loss. At the time of his death he held the post of Hon. Treasurer, to which he had been elected in 1904. An obituary notice has already appeared in *Man*, 1912, **44**, but the Council wish once more to record their deep sense of gratitude for the great service that he rendered to the Institute during his eight years of office.

Dr. A. H. Keane died in February at the age of 79: for 33 years he had been a Fellow of the Institute and his eminent services to Anthropology, which he made his lifelong study, are well known to all members of this Society. An obituary notice has appeared in *Man*, 1912, **28**.

Mr. Andrew Lang, one of the most talented and versatile of contemporary Anthropologists, died in July, and a notice has already appeared in *Man*, 1912, **85**. Though the sphere of his activities was unusually wide, he devoted a great portion of his time to the elucidation of Anthropological problems and his numerous writings, conspicuous by the clarity and perfection of the style in which they are composed, will be of lasting value to students of primitive Sociology.

MEETINGS.

During the year 1912, 11 ordinary meetings have been held, at which 13 papers were read: 4 dealing with archaeological, 5 with physical, and 4 with ethnographical subjects. Eight exhibitions of specimens were made.

HUXLEY MEMORIAL MEDAL.

The Huxley Memorial Medal was this year presented to Professor W. Gowland. The title of his lecture, which was delivered on November 19th, was "The Metals in Antiquity."

PUBLICATIONS.

During the year two half-yearly parts of the *Journal* have been issued, viz., Vol. XLI, Part 2, and Vol. XLII, Part 1. Of the former 134 and of the latter 111 copies were sold. The Council is happy to call attention to the fact that the combined sales this year constitute a record, exceeding that established in 1908 by 26 copies.

With regard to *Man*, the usual twelve monthly parts have been issued; in the case of 2 of these parts the number of pages was increased from 16 to 24. The sales show a slight decrease on the record established last year but the figures may be regarded as satisfactory. The margin of profit is not yet sufficiently large for the Council to recommend that the present system of subscription be abandoned.

LIBRARY.

The number of accessions to the library easily constitutes another record, amounting to 580 as compared with 455, the figure for 1910. The exchange list has been augmented by 2 British publications. Considerable progress has been made in the preparation of the new catalogue.

EXTERNAL.

The XVIIIth International Congress of Americanists was, at the invitation of the Council of the Institute, held in London from May 27th to June 1st. A short report was published in *Man*, 1912, 72.

Early in the year the Council issued an invitation to Societies and Institutions interested in Anthropology to send representatives to a conference for the purpose of discussing the possibility of instituting an International Anthropological Congress. The Conference was held on June 4th under the Chairmanship of the President of the Institute, when 28 delegates were present. A full report of the proceedings has appeared in *Man*, 1912, 72.

TREASURER'S REPORT FOR THE YEAR 1912.

The great advance, amounting to about £60, in the subscriptions (exclusive of arrears) which the year 1911 showed over 1910 was practically maintained in 1912, if we allow for the fact that the receipts for the latter year were not, as were those of each of the years 1910 and 1911, swollen by a life subscription, which is in fact a payment of all future subscriptions in advance.

The receipts from sale of the *Journal* in 1912 exceeded those of 1911 by about £100; and, as the cost of publication (deducting £115 17s. 10d., the extra expense of paying for 3 *Journals* in the year) was only about £57 more, the deficiency for 1912 was only about £75, which may be compared with the deficiency of £118 2s. 1d. in 1911.

Man practically paid its way, the profit, as shown in the Revenue Account, just about covering the cost of postage. This item can hardly be compared with 1911, as the amount received from *Man* that year was largely augmented by the getting in of arrears.

The gross income for 1912 was £1,256 6s. 10d., which is about £31 less than that actually received in 1911; but, if 1911 had not had the benefit of a life subscription, the difference would have been only about a couple of pounds. And, as the income received from arrears in 1912 was about £70 less than it was in 1911, it follows that there has been a substantial advance in normal income.

The expenditure, on the other hand (deducting the extra *Journal* expense, and adding £56 5s. 0d., one quarter's rent unpaid), was £1,192 2s. 2d., which is about £10 less than that of 1911.

From the above figures it will be seen that, after allowing for these items of *Journal* and rent, the true balance of income over expenditure for the 12 months' working of 1912 has been £64 4s. 8d., which is satisfactory.

It will be noticed that I have prepared the accounts for 1912 in a form differing from that adopted by my predecessor. The length of the capital account in this transition account was unavoidable; but future capital accounts, prepared on the same system, will be short and simple.

ROBERT W. WILLIAMSON, *Hon. Treasurer.*

ROYAL ANTHROPOLOGICAL INSTITUTE

ACCOUNTS FOR

| | | REVENUE | | | | | |
|--|--|-----------|----|----|-----|----|-----|
| | | RECEIPTS. | | | | | |
| | | £ | s. | d. | £ | s. | d. |
| BALANCE in hand, January 1st, 1912 | | 139 | 2 | 9 | | | |
| Less Library Fund (below) | | 16 | 3 | 5 | | | |
| | | | | | 122 | 19 | 4 |
| SUBSCRIPTIONS :— | | | | | | | |
| Current | | 663 | 10 | 3 | | | |
| Arrears | | 29 | 8 | 0 | | | |
| Advance | | 33 | 12 | 0 | | | |
| Life | | — | | | | | |
| Affiliation | | 4 | 19 | 0 | | | |
| | | | | | 731 | 9 | 3 |
| SALE OF "JOURNAL" | | | | | 286 | 4 | 6 |
| SALE OF "MAN" | | | | | 167 | 6 | 10½ |
| SALE OF OTHER LITERATURE :— | | | | | | | |
| Huxley Lecture..... | | 4 | 1 | 5 | | | |
| Bibliography | | | 9 | 8 | | | |
| Report of Anthropometric Committee | | 3 | 7 | 10 | | | |
| Hobley's "Uganda"..... | | — | | | | | |
| Physical Deterioration | | 7 | 6 | | | | |
| | | | | | 8 | 6 | 5 |
| ADVERTISING | | | | | 11 | 17 | 0 |
| DIVIDENDS | | | | | 47 | 8 | 11 |
| SUNDRIES | | | | | 3 | 13 | 11 |

£1,379 6 2½

LIBRARY

| | | £ | s. | d. |
|---|--|-----|----|----|
| BALANCE in hand, 1st January, 1912..... | | 16 | 3 | 5 |
| Balance | | 7 | 1 | 0 |
| | | £23 | 4 | 5 |

OF GREAT BRITAIN AND IRELAND.

THE YEAR 1912.

ACCOUNT.

| | PAYMENTS. | | | £ | s. | d. | £ | s. | d. |
|--|-----------|--|--|-----|----|----|--------|----|----|
| RENT (three quarters only) | | | | 168 | 15 | 0 | | | |
| Less rent received | | | | 32 | 0 | 0 | | | |
| | | | | | | | 136 | 15 | 0 |
| "JOURNAL" (3 numbers) | | | | | | | 477 | 9 | 7 |
| "MAN" | | | | | | | 146 | 10 | 6 |
| ADVERTISING | | | | | | | 18 | 9 | 10 |
| SALARIES | | | | | | | 151 | 6 | 8 |
| HOUSEKEEPING | | | | | | | 32 | 19 | 7½ |
| LEGAL EXPENSES | | | | | | | 6 | 8 | 6 |
| STAMPS AND PARCELS | | | | | | | 82 | 5 | 9 |
| TELEPHONE | | | | | | | 7 | 5 | 0 |
| PRINTING AND STATIONERY | | | | | | | 51 | 3 | 8 |
| COAL, GAS, AND ELECTRIC LIGHT | | | | | | | 20 | 5 | 11 |
| LANTERN | | | | | | | 6 | 6 | 2 |
| INSURANCE | | | | | | | 2 | 3 | 2 |
| TRAVELLING | | | | | | | 5 | 6 | 2 |
| SKULLS (Casts of) | | | | | | | 6 | 1 | 4 |
| HUXLEY MEDAL AND LECTURE | | | | | | | 3 | 10 | 1 |
| DIRECTORIES, SUBSCRIPTIONS TO | | | | | | | 2 | 5 | 0 |
| TYPEWRITER AND TYPEWRITING | | | | | | | 3 | 0 | 11 |
| ADDRESSOGRAPH MACHINE (Purchase of) | | | | | | | 26 | 17 | 9 |
| CYCLOSTYLE (Purchase of) | | | | | | | 16 | 16 | 0 |
| STOVES (Purchase of) | | | | | | | 5 | 11 | 5 |
| CONGRESS ANTHROPOLOGICAL SCIENCE (Donation to) | | | | | | | 5 | 0 | 0 |
| SUNDRIES | | | | | | | 16 | 12 | 7 |
| Balance | | | | | | | 150 | 15 | 7 |
| | | | | | | | | | |
| | | | | | | | £1,379 | 6 | 2½ |

ACCOUNT.

| | £ | s. | d. | £ | s. | d. |
|----------------------------|----|----|----|-----|----|----|
| BOOKS AND BINDING | 34 | 14 | 5 | | | |
| Less sums subscribed | 11 | 10 | 0 | | | |
| | | | | 23 | 4 | 5 |
| | | | | £23 | 4 | 5 |

BALANCE SHEET.

| LIABILITIES. | | £ | s. | d. |
|---|--|-------|----|----|
| Amount due to Anthropological Notes and Queries | | 68 | 10 | 8 |
| " " " " " " | | 2 | 10 | 10 |
| " (received 1912) | | 15 | 0 | 0 |
| Sum received from Mr. Dayrell on Account of Cost of <i>Folk Stories</i> , Nigeria | | 86 | 1 | 6 |
| Total outside Liabilities | | | | |
| Balances of previous Accounts: | | | | |
| Revenue Account | | 150 | 15 | 7 |
| Capital Account | | 2,146 | 2 | 0 |
| | | 2,296 | 17 | 7 |
| Less Library Account | | 7 | 1 | 0 |
| | | 2,289 | 16 | 7 |

| | £ | s. | d. |
|---|-------|-------|-----------------|
| ASSETS. | | | |
| Books in Library, Publications and Furniture as per estimate of 1903 | 885 | 0 | 0 |
| Burma Railway £886 stock at 108 (ex div.)..... | 956 | 17 | 7 |
| Metropolitan Railway £300 preference $\frac{3}{4}$ per cent. stock at 86 | 258 | 0 | 0 |
| Subscriptions in arrear valued at | 35 | 14 | 0 |
| Publication Balances, stated at the amounts at which they stand in the accounts, but probably of only small value : | | | |
| Hobley's "Uganda" | 21 | 7 | 4 |
| Bibliography | 51 | 8 | 0 |
| Physical Deterioration | 7 | 4 | 8 |
| | <hr/> | <hr/> | <hr/> |
| | 80 | 0 | 0 |
| | <hr/> | <hr/> | <hr/> |
| | 18 | 11 | |
| Deduct amount received in 1912 for Report of Anthropometric Committee in excess of sum at which it stood at beginning of year | 151 | 18 | 3 |
| | <hr/> | <hr/> | <hr/> |
| | 9 | 18 | $7\frac{1}{2}$ |
| Cash in hand 31st December, 1912 : In Bank | 161 | 16 | $10\frac{1}{4}$ |
| Petty cash (Assistant Secretary) ... | 11 | 5 | $\frac{1}{2}$ |
| | <hr/> | <hr/> | <hr/> |
| Less due to Treasurer | 161 | 5 | 5 |
| | <hr/> | <hr/> | <hr/> |
| | | | £2,375 18 1 |

ROBERT W. WILLIAMSON,
Hon. Treasurer.

W. A. have examined the above accounts and compared them with the Books and Vouchers relating thereto, and find the same to be accurate.

(Signed) G. UDNY YULE, } Auditors.
O. M. DALTON, }

PRESIDENTIAL ADDRESS.

RECENT ARCHÆOLOGICAL DISCOVERIES IN MEXICO.

[WITH PLATE I.]

A. P. MAUDSLAY, M.A., D.Sc.

ONE of the principal events of interest to this Society during the past year has been the meeting in London, for its 18th Session, of the International Congress of Americanists, and I propose now briefly to pass in review some of the papers read during the Session, dealing with the ancient cultures of Mexico and Central America. A good deal of attention has lately been given to the pre-Aztec ruins of Teotihuacan on the great Mexican plateau. To quote from Professor Seler's paper—

"The two great pyramids which rise in the midst of the ruins are called by the Mexicans the Pyramids of the Sun and of the Moon,¹ and the double row of small mounds running in a straight line through the fields, passing the foot of the Pyramid of the Sun and terminating at the base of the Pyramid of the Moon, were considered by the Mexicans to be the graves of ancient kings. Hence, up to the present date, the street between these two rows of small mounds is known by the name 'Camino de los Muertos,' the street of the dead.

"This interpretation is wrong. The excavations made by Désiré Charnay and Leopoldo Batres proved that these mounds were not graves but dwellings, and that this site was occupied for a long time, or at different intervals, for a lower set of rooms was discovered filled up with stones and solid masonry, which formed the foundations of other buildings erected on the top of them. These later rooms had been destroyed by fire, only the lower parts of the walls are standing and these show unmistakable traces of glazing by fire. The ruins of Teotihuacan are famous for the nearly inexhaustible quantity of little clay heads, fragments of pottery and other antiquities with which the fields are strewn, or that may be found by the most superficial digging. Excavations made in a more systematic way brought to light real treasures. The examples of the potters' and stone-cutters' art of the Teotihuacan culture are more artistic than those of the later centres of Mexican culture, and there is generally wanting a relation to the well-known types of the Mexican pantheon. Only Tlaloc, the Mexican rain-god, has been with certainty recognized among the finds at Teotihuacan, and there may be traced a faint relation to other types."

¹ See "Presidential Address," *Journal of the Royal Anthropological Institute*, Vol. XLII, 1912, p. 14, Fig. 1.

Among the papers presented to the Congress was one by Señor Don Leopoldo Batres, sometime Inspector-General and Conservator of the Archaeological Monuments of the Mexican Republic, dealing with the ruins of Teotihuacan, especially with his restoration (?) of the Pyramid of the Sun. In this paper he says—

“I removed the earth at the level of the base of the Pyramid of the Sun, at the south-west angle, and beneath the accumulated soil and one structural layer, 4 metres thick, already in ruin, there appeared a fragment of facing formed of stones whose regular and level surfaces faced outwards.”

Señor Batres goes on to explain how he believed that the American Indians raised their buildings by superimposing layer on layer. As he expresses it:—“The interior layer of all was the ‘leit motiv’ of the rest; all were equal and each completely finished with a stairway to ascend to the shrine, and the structure was (in each instance) similar, so that one may feel certain that by removing, so to speak, the outer layer, the under layer would reproduce in its entirety the arrangement of the former” (that is of the finished building), “as do the underlying leaves of an onion.”

Further on Señor Batres states that—“Three great difficulties stood in the way of the execution of this gigantic exploration; the first was to realize the scientific data of the condition in which the monument was found, and, in conformity with it, to carry out methodically the excavations under such conditions of solidity and security, that the sacred interests with which we were about to deal could not possibly be endangered; the second difficulty was with regard to the very considerable sums of money which had to be spent in removing and carting away the many thousands of cubic metres of rubbish and earth which had covered a mass 258 metres square at the base, and of a total height of 76 metres—including earth and stones belonging to the ruined exterior layer measuring 15 metres in thickness.”

Señor Batres goes on to complain of criticisms of his methods (criticisms which I have not seen) but those paragraphs from his own hand which I have read to you are quite sufficient to account for the condemnation of his methods.

No one who has seen much of ancient American building will deny that the pyramidal foundations are frequently built more or less in layers, with walls (which afterwards became interior walls) built in the course of construction to support the mass; also that buildings were sometimes enlarged by completely surrounding and covering over the original foundation mound by aggregations of rubble and masonry to enable larger buildings to be erected on the summit. This latter arrangement can be very clearly seen in the Maya ruins of Chichén Itzá in the building known as the Casa de Monjas or Nunnery, where, through the foundation mound having been used during recent years as a quarry, two inner foundations faced with cut stone have been brought to light. This, however, has evidently been done because the original building had become too small for the purpose for which it was used, and new and more important buildings were required. If, however, the outer

covering were removed we should certainly not find a complete model of the final building underneath.

The outer cement facing on the Pyramid of the Sun at Teotihuacan was certainly intact in some places when I examined it not many years ago, it may only have been in patches, it is true, but enough remained to form some idea of the finished appearance of the building. Whether Señor Batres removed a thickness of 4 metres, as he states in one paragraph, or 15 metres as he states in another, there can be little doubt that he has destroyed the value of one of the most interesting structures of the ancient Americans, and left in its place a stupendous monument of self assertion and incompetence. This is all the more to be deplored as the culture associated with Teotihuacan is every day becoming a matter of greater interest to the archaeologist and ethnologist.

I will now turn to a paper by Señor Don Manuel Gamio, of Mexico, who describes the result of six months' excavation work in the neighbourhood of Atzacapotzalco, especially of one area 25 metres square, which was carefully examined to a depth of 7.50 metres. (Fig. 1.)

The first layers to the depth of about 60 centimetres, which had been a good deal disturbed by cultivation, contained mixed fragments of Aztec and modern pottery, and many other excavations proved that fragments of Aztec pottery were always to be found to that depth. Layers 3 to 14 reaching to a depth of 3.25 metres contained various pottery objects, including vases, small human heads made in moulds, personal ornaments, etc., of the same type as those found at Teotihuacan, but no trace of objects acknowledged to be Aztec.

Below this Teotihuacan culture, for a depth of rather more than 2 metres, divided into four layers, objects were found which are described as of the "Tipo de Cerros," or Hill-type, as similar objects have been found on the lower slopes of of various natural eminences in the Valley of Mexico.

The small pottery heads of the Hill-type are all evidently made by hand, and not formed in moulds, and thus differ in technique as well as in type from those found at Teotihuacan.

As a result of these excavations, it is reasonably argued that the type of the hills is the oldest, and must have covered a long period of time to account for the 2 metres of deposit; that this was followed by the Teotihuacan culture extending over a still longer period, and that the Aztec culture is the most recent and was of comparatively short duration.

I must now refer again to Dr. Seler's paper, for in that he shows that objects of the Teotihuacan type can be traced through Tlalnepantla to the neighbourhood of Quautitlan and, again, to San Juan de los Llanos, Jalapazco and San Andres Chalchicomula on the eastern margin of the great central plateau.

It must especially be noted that Dr. Seler examined a vase dug up near Jalapazco, ornamented with figures of singing priests pouring a libation on the ground, so similar in design to a mural painting found in the ruins of Teotihuacan that he is convinced it is a representation of the same ceremony.

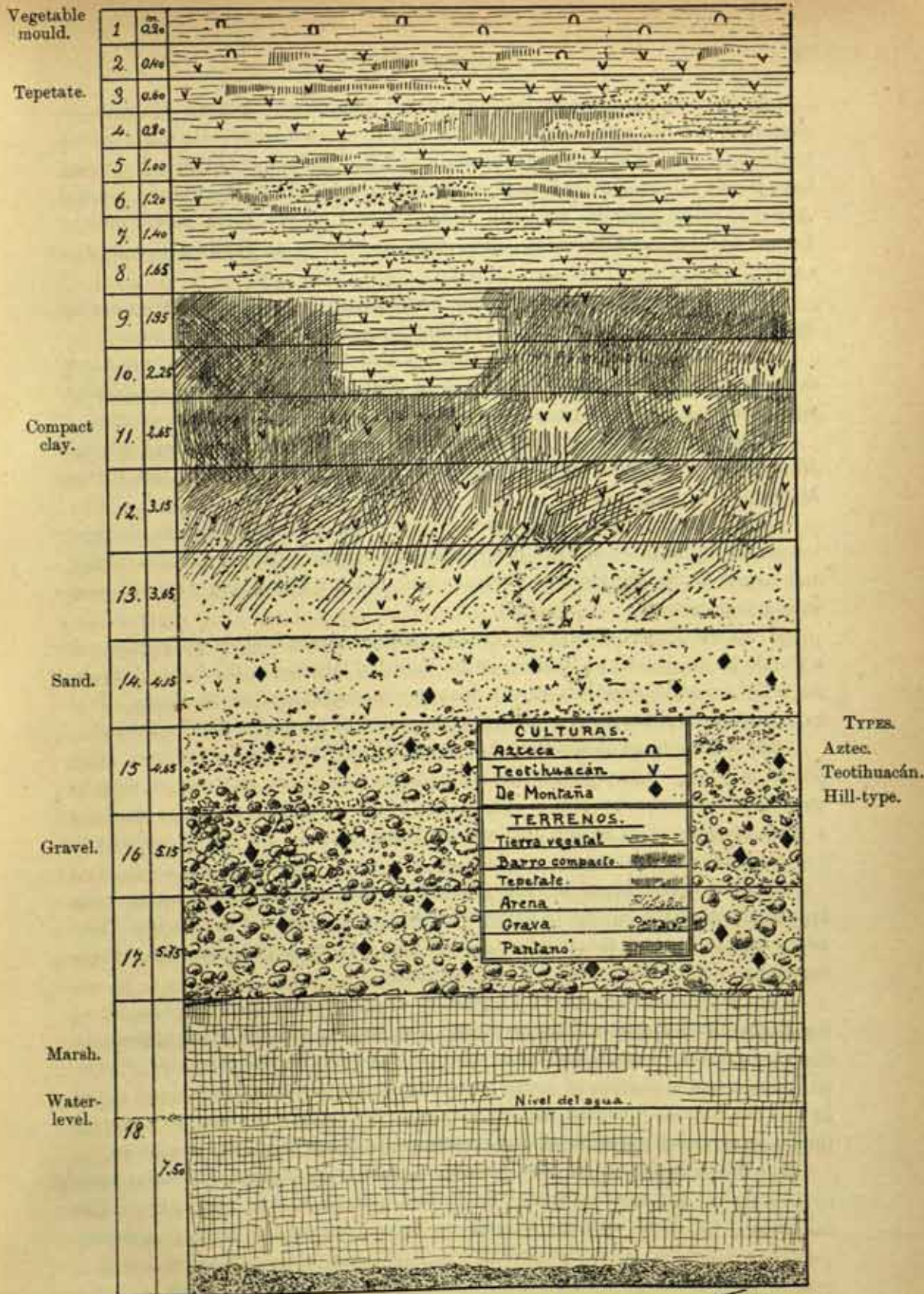


FIG. 1.—SECTION OF EXCAVATIONS AT ATZCAPOTZALCO, VALLEY OF MEXICO, BY SR. M. GAMIO, 1911, WITH ARCHEOLOGICAL AND GEOLOGICAL LEVELS. (From Proceedings of 18th International Congress of Americanists.)

It may be remembered that in my last Presidential Address I made the suggestion that the ruins between Mixco and the city of Guatemala might belong to the same culture as that of Teotihuacan, and that the people of that culture may have been a hill race extending throughout the highlands of Mexico and Central America, whose portraits may still be seen carved on the Maya monuments of Ixkun and its neighbourhood, where they are shown as captives bound with cords.¹

That rather daring suggestion has certainly not lost weight by the recently acquired evidence of the extension and long duration of Teotihuacan culture.

In any case, we are faced with the fact that the problem of the origin and development of the more civilized races of America is one of great complexity, which will need the most painstaking and accurate research to ensure a solution.

Señor F. del Paso y Troncoso contributed a photographic copy of the *Memorial of the Indians of Tepetlaoztoc*, a manuscript preserved in the British Museum.

In the paper accompanying this contribution, Señor Troncoso pays an eloquent tribute to the memory of Lord Kingsborough, a former owner of the manuscript, and names it the *Kingsborough Codex*, an adscription which I feel sure will meet with general assent.

The Codex is post-Columbian, and is a petition of the Indians of Tepetlaoztoc, a pueblo in the district of Texcoco, in the Valley of Mexico, to the King of Spain, for relief from the exactions of the Spanish "encomenderos" or over-lords. It is expressed in Mexican picture-writing, accompanied by an explanation in Spanish.

The Codex is an interesting document, not only historically, but from other points of view. Although conforming to ancient Mexican methods of picture-writing, it shows an evolution in style due to contact with Europeans; it furnishes a good example of a native Mexican map, and adds to the list of pictorially expressed place-names.

Cocopin, the cacique of the Pueblo at the time of the conquest, was apparently the sixth cacique in succession from the foundation of the Pueblo. Two pages are devoted to the tribute paid to him, and to a pictorial table of his descendants up to the time the petition was made.

On the two following pages are pictures of the caciques from the founder of the Pueblo until the date of the petition. The first six caciques stand apparently clothed in feather mantles, are armed with bows and arrows, and carry full quivers, and each wears a chaplet of leaves round the brow. Cocopin, the cacique at the time of the Spanish Conquest, and his successors, are seated on a sort of wicker (?) throne, wear woven garments of ornate patterns, and their heads are unadorned.

The following four pages give pictures of twenty subordinate chieftains, each one a ruler of towns or villages, which paid tribute to him personally. The existence of this local baronage suggests to Señor Troncoso the probable meaning

¹ See *Journal of the Royal Anthropological Institute*, 1912, Vol. XLII, Plate I.

of certain town names, such as Cempoal-lan (*cempoal* = 20), the place of twenty nobles or barons; Chiconauh-tlan, the place of the nine baronies.

The following 130 pages are interesting, historically, as dealing with the exactions of the Spanish encomenderos, or over-lords.

Señor Troncoso promises us a transliteration and extended commentary of this Codex, to which we look forward with great interest.

I will now draw your attention to a most interesting paper, most carefully and beautifully illustrated, by a member of this Institute, Mr. J. Cooper Clark.

This contribution is entitled *The Story of Eight Deer*, in Codex Colombino.

The personality of Eight Deer was first brought into notice by Mrs. Nuttall.

Mr. Cooper Clark, when studying the splendid collection of antiquities in the National Museum of Mexico, turned his attention to the Codex Colombino, a native manuscript now preserved in the Museum.

The Codex is written, or rather painted, on deer skin, the surface of which has been coated with a white varnish.

The Codex, which is incomplete, measures 6.80 metres in length and 20 centimetres in width, is folded like a screen into book form, and is painted on both sides.

The study of this Codex showed Mr. Cooper Clark that it contained, among other records, the history of an individual named Eight Deer or Ocelot Claw. The name glyph is a deer's head with eight round disks, that is, the numeral eight. I am inclined to think that Eight Deer, which is a date in the Mexican calendar, probably marks the day of his birth, although Mr. Cooper Clark gives his birthday as XII Akatl 1 Malinalli. The name of Ocelot Claw was apparently bestowed on him later in life. The interesting point is that Mr. Cooper Clark was able to trace the history of this individual in five other codices, namely, the Zouche Codex in the British Museum, the Vienna, the Bodleian, the Becker and the Selden Codices. In some instances these latter codices add incidents in the life of Eight Deer, which are not given in the Colombino. We can see the hero conquering towns, undergoing penance, playing at the ball game in a Tlaxtli, making offerings to the gods, having his nose pierced by the priests to enable him to wear the Yaka-xiu-huitl or nose ornament, and engaged in kindling the sacred fire.

Then, in the Vienna Codex, Eight Deer is seen advancing to the attack of a town symbolized by a bird perched in a tree in the middle of a lake; in the next picture Eight Deer is depicted stretched upon a sacrificial stone, while the priest plunges a knife into his breast to pluck out his heart, and finally in the Bodleian Codex we see him wrapped up in a mummy pack after death.

The town symbolized by a bird perched on a tree in a lake may be the city of Mexico, for an eagle perched on a cactus is the well-known glyph for Mexico—if that is so, Eight Deer may have failed in an attack on that city, and in consequence may have suffered death on the sacrificial stone.

However, the date suggests another interpretation, for the date of the sacrifice is clearly given as XII Akatl 1 Malinalli, that is, the date given by

Mr. Cooper Clark as the birthday of Eight Deer, so that he lived exactly fifty-two years, or the length of a Mexican time cycle.

Now this at once suggests that we are not dealing with historical fact, but with some mythological calendar story. However, I am very loth to give up the historical view and I do not think Mr. Cooper Clark's argument as to the birth date being XII Akatl 1 Malinalli is a strong one. Moreover, there is a further point of great interest in that Mr. Cooper Clark thinks that he has identified the hero Eight Deer on one of the sculptured slabs removed by Señor Batres from the ruins of Monte Alban near Oaxaca. The sculpture is somewhat defaced, but it is just possible to make out a deer's head included in a cartouche with the numeral eight below it, but in this case the numeral is expressed according to the Maya system of notation, that is by a bar (=five) and three dots, instead of the eight disks of Nahua notation. However, this dash and dot notation is not confined to the Mayas.

Mr. Cooper Clark therefore offers the suggestion that all of these codices, dealing with the life history of Eight Deer, are of Zapotec and not Aztec origin.

This suggestion not only strengthens the historical view of the codices, but also enhances the interest in the very attractive remains on Monte Alban. These ruins are easily accessible, as they stand on the top of an isolated row of hills, and are within an hour and a half's ride of the city of Oaxaca. (Plate I, Fig. 1.)

An excellent birdseye view of the site was drawn by Dr. Holmes of Washington.¹ The site has since been cleared of the few trees and scanty scrub by Señor Batres, and some of the carved slabs were removed by him from their positions and transported to the National Museum in Mexico, which is much to be regretted as there was no damage from forest growth to contend against, and they could have been easily protected had they remained in situ.

I have walked over the site several times, but have not been enabled to do any clearing or make excavation. There seems to me to be evidence of at least two occupations, and two photographs, kindly lent by Mr. J. Cooper Clark (one, from a series of similar figures, the other from a stela), show two very distinct styles of sculpture, of which I take the monkey-like figures (Plate I, Fig. 2), from the position in which they are found, to be the earlier. In the other or second style, which is distinctly Nahua (Plate I, Fig. 3) in type, we are also met with the fact that the accompanying legends are not expressed in picture writing, but in hieroglyphs, approaching the Maya glyphs in form, though not identical with them, and further that the numerals are given in the Maya notation.

Are we here in a halfway house between the Mayas and the Nahuas? Nothing but the most careful examination of the site will help us, and for that we may have to wait some years.

It is worth mentioning that, although I was not able to do any clearing, I scraped away enough of the rubbish with my hands to ascertain the position of the building which formerly stood on the mound marked X, and found that it is not set square with the others as the plans show it, but was slewed round towards the

¹ See *Ancient Cities of Mexico*, Field Columbian Museum's Publications, 1897.

east, possibly to catch the solstitial sunrise in a distant gap in the hills. I have no note on the subject, and I hope the next visitor to the ruins will ascertain the true bearing.

There is no building now visible at Monte Alban, but such fragments of walls and sculpture as can be seen show no likeness whatever to that curious puzzle, the ruins of Mitla, only thirty miles distant, where the buildings are still in a fair state of preservation.

I am not fond of theorizing from the insufficient data yet acquired, but I was once bold enough to suggest that the Maya race had once occupied the greater part of southern Mexico, and had been driven by Nahuatl invaders into Central America, where they had developed their script, but this was before I had seen Monte Alban and its glyphs, which may modify that view. However, my reason for that suggestion was that Quetzalcoatl, the plumed serpent, under the name of Kukulcan, was the principal god, or it would be safer to say the culture god, of the Mayas, and was also the principal god worshipped at Cholula, and that the so-called pyramid of Cholula is more like a composite Maya foundation mound than such a foundation mound as the pyramid of the sun at Teotihuacan.

Then the Huastecs near the mouth of the Rio Panuco are undoubtedly of the Maya race both in language and physical characteristics, and my suggestion was that they were a remnant left behind when the Nahuatl drove the Mayas into Central America. Following up stream on the Rio Panuco in the Huastec country we come to Tula, the reputed home of those misty people, the Toltecs, and at Tula were unearthed the ruins of a temple with two feathered-snake columns, precisely similar to the snake-columned temples at Chichén Itzá.

Perhaps in the future it will be possible to unravel the deities of the Mexican pantheon, and we may find that Tlaloc was the god of the Teotihuacan culture, Quetzalcoatl, the god of the displaced Mayas, and that both were accepted by the invading Nahuatl, but that both were of less account than their fierce and ruthless war god, Huitzilopochtli.

I am quite well aware that my remarks have thrown no new light on a very complicated and difficult subject, but as this is the last time I shall have the honour of addressing you from this Chair, I wished to try and impress on you what a rich and important field of archaeological and ethnological research lies open to the explorer and student in Mexico and Central America, and to express the hope that its exploitation will not be left to foreigners alone. Germans, Frenchmen, and North Americans have accomplished much and are still at work, and we can boast the names of Kingsborough and Catherwood in the past, but I do not want to see England fall out of the race, and at the present moment, with the exception of our friend Mr. Cooper Clark (who I hope will return to a work he has so well begun), I do not know a single Englishman who is in the field.

There can be little doubt that the subject which will take much of our attention during the coming session will be the antiquity of man. You will all remember the very interesting discussion on the papers by Mr. Reid Moir and Dr. Keith last

session on the Ipswich man, and the difference of opinion as to whether that skeleton was found above or below the Boulder Clay.

This year it is to be hoped that we may have a paper on the very remarkable flints, I dare not as yet call them flint implements, which have been found by Mr. Reid Moir in the Red Crag underlying the Boulder Clay. A selection of those flints is now lodged in the Department of the British and Medieval Antiquities at the British Museum, and I hope you will make yourselves acquainted with them before the discussion takes place, for they are well worthy of your attention, and I may add, the discussion promises to be a very lively one. If the chipping of these flints is the work of man, it will lengthen our pedigree very considerably. However, even that respectable length of our family tree has received a great addition by the discovery by Mr. Dawson of the Sussex man (or woman), which possibly takes us back to Pliocene times. The modest anthropologist is sometimes accused of letting his imagination run riot, geologically, over a discovery of ancient human remains, but luckily this last discovery was made by a competent geologist. But even in this case although the gravel in which the Sussex cranium was found is undoubtedly very early, it is open to question whether the cranium is as old as the earliest constituents of the gravel. All these matters will, I hope, come before you during the present session, and I feel sure that you will agree with me that you could not have a more competent Chairman to preside over these discussions than your President-elect, Dr. Keith.

That he will express his own opinion freely, I have no doubt, and back it when necessary with a good fighting speech, but a keen sense of humour will save him from exaggeration, unless a little exaggeration may be needed to tempt a reluctant opponent into defining his point of view. Personally, I feel honoured in the choice you have made of my successor, and am convinced that the interests of this Institute could not be confided to safer hands.

Before concluding, I wish to tender my most grateful thanks to the Members of Council for the support they have afforded me during my term of office, and especially am I grateful for the ever willing help that has been given me by the Officers of the Institute. I accepted the position of your President with considerable misgiving, as I am not a trained anthropologist, and if I have been able to carry out my duties without any serious fault, it has been chiefly owing to the careful coaching I have received from Mr. Joyce and Mr. Martindell. This is, I believe, the last time that Mr. Joyce will officiate as your Secretary. Not only are my thanks due to him, but I feel sure that I am expressing the wishes of every fellow of the Institute, whether present or absent to-night, in offering him our most grateful thanks for the valuable service to the Institute, which he has given with so much cordiality and goodwill during his long term of office.

The address was fully illustrated by lantern slides.



(Photo. J. Cooper Clark.)

FIG. 1.—GENERAL VIEW OF MONTE ALBAN, LOOKING NORTH FROM PLATFORM OF GREAT PYRAMID.



FIG. 2.—ONE OF A SERIES OF FIGURES, MONTE ALBAN.



FIG. 3.—STELA FROM MONTE ALBAN. A WARRIOR WITH THE GLYPH "EIGHT DEER."

THE WAWANGA AND OTHER TRIBES OF THE ELGON DISTRICT, BRITISH EAST AFRICA.

BY HON. KENNETH R. DUNDAS.

1. INTRODUCTION.

THE Elgon district is inhabited by several different tribes subdivided into many distinct political sections. The present paper deals with a portion of these tribes and sections.

My notes were collected over a period of three months under pressure of much other work; it is not pretended, therefore, that they are either very complete or very accurate; all the information here given has, however, been verified as carefully as possible and is, I think, on the whole substantially correct; and in any case a paper of this description carries with it its own internal evidence.

I do not propose entering very closely into details of the history or origin of any of these people; what information I possess on these points will appear in my notes, and I leave it to others to draw their own conclusions. Similarly I have drawn no distinctions between myths, legends, traditions and facts of real historical value.

I have two remarks to make with regard to these notes. The first is this: I have heard doubts expressed at times as to the accuracy of my information on the Kavirondo and in particular of that portion relating to chief Mumia. Now up to the time when these notes were ready for the typewriter, I had read one work only on anthropological science; since then I have read two more; one is Professor Frazer's *Pysche's Task*, the other *Early History of the Kingship* by the same author, and in both these I find the most abundant confirmation for almost all my information.

My second remark is this: I have heard it stated that Mumia is a man of no importance or at best a self-constituted headman; I think the account I have here given of the Wawanga kings is sufficient to contradict this idea.

I make these two remarks for this reason. I collected this information in order that I might, with the knowledge thus gained, be in a better position to administer these people; it may therefore be equally of use to other administrative officers, and it is mainly with that idea that I have taken the trouble to compile these notes; and I therefore ask that criticism directed towards them may not be of the purely destructive order.

In the following pages I propose dealing with the undermentioned tribes:—

- | | |
|-------------------------------------|-----------------------|
| 1. The Wawanga. | 8. The Kitosh tribes. |
| 2. The Wamanga. | 9. The El Konyi. |
| 3. The Uasin-Gishu Masai at Mumias. | 10. The Walago. |
| 4. The Watsotso. | 11. The Wangoma. |
| 5. The Kakumega people. | 12. The Wamia. |
| 6. The Kabras. | 13. The Kakelelwa. |
| 7. The Tatchoni. | |

2. WAWANGA.

I.—*Distribution.*

I. This tribe is separated into two distinct political groups: one under Mumia S/O Skiundo; the other under Tomia S/O Sakwa. The former occupies the adjoining districts of Loreko and Uwanga¹; and is by far the larger and more important of the two. The latter occupies the country known as Mukullu and numbers perhaps some 3,500 souls. The population of both divisions is largely intermixed with foreign tribes.

II. *Clans.*—Appendix A is a list of the Wawanga clans, their respective totems and origins according to tradition.

II.—*The Wawanga Dynasty.*

I. *Family tree.*—The Wawanga are ruled by a royal dynasty; their tribal history is essentially that of their rulers. Attached will be found the royal family tree (Appendix B). I cannot guarantee its absolute accuracy, but for all practical purposes it will, I think, be found sufficiently correct.

II. *History.*—The ancestor of the present ruling family was a man called Kwandedi. He was born in Teriki (Kisumu district) and moved, whilst yet a young man, to Shira on the banks of the River Yala. Here his two sons, Kaviakalla and Wanga, were born.²

At this time tradition has it the whole country, excepting Shira and the Manga³ district, was covered with dense forest, the haunt of numerous elephants and other big game.⁴ Traces of this forest are still to be seen in many parts.

The coming of the Wawanga to Loreko was according to tradition in this wise. After their father's death, or perhaps when he was a very old man, Kaviakalla and Wanga quarrelled; it is said because the former's wife, being suspected of stealing

¹ *Vide* Appendix A, (a).

² *Vide* Appendix A, (b).

³ Not to be confused with the Wawanga. Further information on this tribe will be given in a separate paper.

⁴ I can find scarcely any trace of the existence of a hunting tribe such as the Athi of Kikuyu.

bananas from the latter's plantations, and one day being actually caught in the act, went and hanged herself. Wanga thereupon fled in fear of his brother, and taking refuge with the Wamanga worked as a servant for an old man and his wife. Now Wanga was wearing his copper bracelet, which only the Itawkho wear,¹ and he kept his hand concealed under his cloak, that none might recognize him for a chief; telling the people that his hand was sick. The woman in whose house he lodged became suspicious, however, and one day she placed food and water for him in the hut and boring a hole in the wall, spied upon him and saw him eating with the hand, on which he wore the copper bracelet.

So the news went round that a great chief had lodged in their village, and reached Wanga's wives, children, and retainers, who had long been searching for him, and they and some people from Maragoli, called Wakholue, accordingly came and joined him; and he and all his people crossed over the Lusumu and built their village at Loreko.

Later Wanga explored the country to the north of the Nzaea in the direction of Mount Elgon, and at a place called Matungu he fell ill and died. When he saw that his end was approaching, he gathered his people about him and addressed them thus: "This is my camp, where I shall die; when, therefore, chiefs of my loins depart, bury them here." And to his son he said: "When I am dead, do not forsake my country, but build at Loreko."

So Wanga died and was succeeded by his son Wavalla; and Wavalla built a great village at Loreko near the site of the present Government Station, and all his people lived with him in this village.

Wavalla was a great cattle expert, and he showed the people of Wabo in Ukhaio, whose cattle were very fierce, how to cut off the tips of the horns, and for every four head he treated thus he received one head in payment.

Now his brother Muroko coveted the chieftainship, and he told the people of Wabo that all their cattle would die, because Wavalla had cut off the tips of their horns; so the Wabo killed Wavalla, and Muroko proclaimed himself chief in his place.

But the dying chief gave his copper bracelet to his Wakhaliu servant saying: "Take this bracelet to Wambatsa's village, so that Muroko may not kill you to obtain it and thus become chief; and tell my wife, who is heavy with child, that if she bear a male child, she is to call it Musui,² so that Muroko may be deceived into thinking the child is a girl, and thus shall my son be chief after me." And in course of time Wavalla's wife bore a male child, and she called him Musui, and he was brought up in the village of Wambatsa,³ his mother's uncle. Wavalla further instructed his servant: "When my son is grown big, and Muroko comes to fight Wambatsa, so that he may be sole chief, put four arrows into his (Musui's) hand,

¹ For information regarding the Itawkho, *vide infra*, 2, III, p. 24.

² Usui is the Kavirondo word for a hen chicken.

³ Wambatsa was a chief of the Wamanga tribe.

one arrow for every day of my funeral, which will never be celebrated,¹ and with these arrows let him shoot at Muroño's people."

Now there was great enmity between Wambatsa's and Muroño's people, because Muroño wanted to rule the latter, and Muroño said: "Why do the common people dictate to me the chief, in my own country? I will go and fight them"; and he came and fought with Wambatsa; and Wambatsa took Musui, and gave him four arrows into his hand; and Musui shot these and killed four men; and thereupon Wambatsa's people fell upon Muroño's people and drove them with great slaughter across the Nzaea. And they proclaimed Musui king; but Muroño continued to reign over the territory across the Nzaea, and refusing to give up his leopard-skin cloak, wore it in his own country.²

The Wawanga thus became split into two sections, each under its own chief.

When Muroño died, he was succeeded by his son Kitai,³ who oppressed the people greatly. He robbed them of their best milk cattle, and it is related of him that, when he heard of any specially fine beast, he would go to the owner's village and remaining there would refuse all meat and drink, until the man, fearing lest his chief should die in his own village, gave up the cow to him.

So the people wearied of Kitai's oppression, and one by one they crossed over the Nzaea into Loreko, until he was finally left with scarcely any people to rule over.

When therefore Musui was crowned king, the people came to him and said: "Look at Kitai, how because of his oppression of us he is left without any people; see to it therefore that, when you die, your children do not do as he has done, or else we cannot give them the copper bracelet," and Musui agreed to what they said; and I think there is no doubt that his descendants have on the whole faithfully kept this promise.

Musui was succeeded by Kitechí, on whose succession a series of Wamia raids commenced; the witch doctors therefore instructed the people to depose him and to put in his place a man with a hunchback sister, and Nedía, whose sister was a hunchback, was proclaimed king accordingly. He built his village at Loreko, just beyond the present police lines at Mumias Station. The spot is now converted into a great banana grove. The walls and ditch of the village still remain, and trees, many of them of a considerable size, grow there.

Nedía is said by bribery to have usurped the government over the Wawanga.

At the time the British Government took over this country the Wawanga chiefs ruled over a number of different tribes.

The chronological order, in which the various sections were brought under

¹ *Vide infra*, Wawanga burial customs, p. 33.

² *Vide* Appendix A, (c).

³ I give the story as told me by the people, but I think it is more than probable that Muroño was succeeded by Tavuche, who in turn was succeeded by Kitai. Tavuche's reign was probably very brief and unimportant, and terminated before Musui grew up.

control by Wanga's descendants, appears rather confused, but I take it that up to the time of Nedia's succession the position was this. The Wawanga were an independent tribe occupying the right and left banks of the middle Nzaea River. Those on the left were ruled by Musui and later by his sons; those on the right, by Morono and his sons. On the left bank of the Lusumu were the Wamanga, also an independent tribe ruled by their own chiefs. These three sections appear in Nedia's time first to have been brought under the single control of a chief of the elder branch of the house of Wanga and have, with the exception of the Mukullu section, remained so ever since.

Nedia's descendants gradually extended their rule over many other sections and tribes in the Elgon district. Under Skiundo, the father of Mumia, the Wawanga kingdom reached its zenith. The exact amount of control exercised by these chiefs over the different sections varied no doubt considerably, but their influence made itself felt over a very large area, and but for the advent of the white man I think there can be no doubt that Mumia and his descendants would have succeeded in establishing a great kingdom very much on the lines of that of King Mtesa of Uganda. Whether in doing so they would have come in conflict with the kings of Uganda, and gone under before them, it is of course impossible to say; but at any rate there can be no doubt that the Wawanga rule contained in it great potentialities for future expansion. Even now at the present day Mumia's influence and authority is still recognized far and wide and extends beyond the borders of the Elgon district.

During Nedia's reign certain Uasin-Gishu Masai left the Angata Nanyooki on account of drought and established themselves temporarily at Lugawkho in Marama. Their chief was Kitumbess of the Oltatua clan.¹ It is related of Nedia that he used to invite these people to his village to drink beer with him, and at night, when they became intoxicated, he strangled them and threw their bodies outside the kraal, giving out that they had died of drink. For this the Masai decided to take vengeance, and they came and besieged Nedia in his village and demanded that he should be delivered up to them.

When Nedia saw that his people would die of starvation, he said: "Let me go out and be killed, that my people may live"; and he and eight of his elders came out and were slain. Nedia ran some 400 yards before being killed. He fell at the foot of some rocks, where his descendants to this day sacrifice annually to his spirit. Dying a violent death he was not buried at Matungu.²

Judging from traditions and stories handed down regarding him, Nedia was the greatest of the Wawanga kings. One is led to suspect, however, that like Saul of old, he fell a victim to the jealousy and intrigue of tribal priests and witch-doctors.

The following is one of the best-known stories told of him; it will serve to

¹ For further information regarding these people *vide* separate paper on the Uasin-Gishu settlement at Mumias.

² *Vide infra*, Kavirondo burial customs, p. 33.

some extent to illustrate what I mean. Nedia had a rooted objection to witchcraft, and to all who practised it, and to convince his elders of the absurdity of their belief in them, he one day hid his copper bracelets in the grass, and then accused them of having stolen them. They denied the theft and Nedia therefore sent for a witch doctor, who administered to them the potion given at trials by ordeal. The elders drank it, and one and all fell down insensible from the effects of the drug. The following day Nedia took the witch doctor and the accused men to the spot where he had hidden the bracelets, and showing them to the witch doctor ordered him out of the country, saying he would not countenance such practices any longer.

On Nedia's death Kitumbess is said to have made Sundwa chief and given him a great quantity of cattle.

Sundwa was succeeded by Mukoya, who is also said to have owed his appointment to Kitumbess; but according to another version Sundwa himself named him his successor.

Mukoya was a younger son; Kweyu, his elder brother, was passed over by Sundwa on account of his bad character and the manner in which he robbed people of their property.

When Kweyu heard that Mukoya was appointed chief, he seized four of the ten sacred spears and the ten copper bracelets¹ and fled with them to Shimuli, near Mumias. His people also seized the royal ancestral stones; they have not been seen since, and what became of them is not known.

An intermittent warfare now ensued between the two brothers and continued up to the time of Kweyu's death. Mukoya dying shortly afterwards, their respective sons Skiundu and Sakwa made peace.

Skiundu was the father of Munia; Sakwa the father of Tomia, the present chief of Mukullu.

When Sakwa died, Wambani, Tomia's younger brother, attempted to make himself chief of Mukullu, but was prevented by the intervention of Munia. Skiundu, another younger brother, also supported Tomia.

III.—*The Itavkho.*

The Wawanga ruling clan is the Wakhitsetse. The clan is divided into numerous branches, as may be seen from my list. Members of the ruling class, and especially heads of the different families, enjoy many privileges denied to the common people. These gradually cease in the case of younger members of the more distant branches. Further, no member of the family can enjoy any special privileges during the lifetime of his father, but on his death a man's sons generally succeed to his rank and dignity, though of course only one son succeeds to the position of supreme chief; thus on the death of Skiundu, the father of the present

¹ *Vide infra*, 2, Part VIII, p. 27.

king, all his sons were promoted to the rank of Itawkho, the name given to chiefs entitled to wear a copper bracelet.¹

All Itawkho are addressed by the common people as "Mwami," and in the case of the king even his own brothers and uncles may not call him by his name. Very old and important elders of the Wakhalivu clan are sometimes permitted to do so; Sai, the great Uasin-Gishu "Oiboni" may call him "N-gerai," my child; Lenyakul, Sai's son, may address him as "my brother."

We have thus here in the case of the Wakhitsetse family a well-defined tribal aristocracy.

IV.—*Chief's Privileges.*

It is rather difficult to define clearly the distinction between the supreme chief and other Itawkho. In the following the term king is applied to the supreme chief only. The privileges and prerogatives enumerated below are in some cases confined to him alone; in others they are enjoyed alike by all the Itawkho. Most of the king's privileges are also enjoyed by reigning chiefs within the limits of their own districts; this is so in the case of Ligorri, for instance:—

- (a) If a man kill an elephant, or find the tusks of a dead elephant, one tusk and the tail are claimed by the chief. If the elephant is a single tusker or if only a single tusk be picked up, it becomes the property of the chief. The hunter or finder is in such case entitled to a reward.
- (b) All leopard and lion skins are claimed by the chief, who gives the owner a small present and invites him to drink beer with him. An Itawkho is rewarded with the present of a bullock.
- (c) Only the king may wear a leopard-skin cloak, or sleep on a lion skin. Ligorri is an exception to this rule; he has the hereditary right to wear a leopard-skin cloak.²
- (d) Certain kinds of stones and beads, such as ancient Egyptian beads, may only be worn by chiefs.³ Anyone finding such a stone or bead must take it to the chief, who gives him in return a sheep.
- (e) The skin and certain portions of the meat of all hippo killed are claimed by the chief. One foreleg is the special perquisite of his headman. The chief does not himself eat the meat but he gives it to his wives, children, and servants. The person who killed the animal is not entitled to any reward.
- (f) All buffalo skins are taken by the chiefs, who give them to their warriors to make shields of.

¹ Promotion to this rank appears to depend to some extent upon the will of the Wakhalivu.

² *Vide* Appendix A, (d).

³ *Vide* Appendix A, (e).

- (g) No one may sit on a stool (or chair) in the king's presence, but must sit on a new bullock hide provided for this purpose in the village.¹ The king's sons may not sit on a stool during his lifetime, nor until a year after his death; but may sit on a log or box. Should a son break this rule, he is liable to be banished from his father's presence for several years.

Common people are not supposed to speak to the king until spoken to; nor are they supposed to talk in his presence. Skiundu is said to have been very particular about this.

V.—*The Wakhitsetse.*

Helot clans.—There are three clans that occupy very much the position of serfs or helots to the Wakhitsetse. These are the Washikava, Wakhalivu, and Wachero:—

- (a) The Washikava are said to have acted as guides to Wanga's people, when they joined him after his flight from Shira. It is (or was) their business to build the king's village, make roads, etc. Both Nedia and Skiundo appear to have worked them very hard and to have treated them with a severity only shown towards slaves.
- (b) The Wachero are the official undertakers to the king.
- (c) The Wakhalivu are the most important of these three clans. Their elders act as advisers to the chief, who consults them in all important matters and is supposed to be guided by their advice. Their young men are his police and messengers; they collect fines, execute punishments and effect arrests, in return for which they receive certain fees.²

The Wakhalivu also kill the king's sacrificial beasts; and in return are given the biggest portion of the meat of the slaughtered animal.

The principal Wakhalivu elders are Malalua, Mananda (or Manda), Sulua, and Kongoti. Malalua is the head of the clan, but owing to the fact that he is uncircumcized, he does not play so important a part as might otherwise be expected.³

Further information regarding the Wakhalivu and Wachero will be found in my notes on the death and burial and coronation of the king.

VI.—*The Manner of the King's Death.*

Wawanga kings are not allowed to die a natural death. Should they become too old to rule, or should they fall sick beyond recovery, they are strangled by the

¹ *Vide* Appendix A, (f).

² *Vide* chapter on Wawanga laws.

³ *Vide* *infra*, 2, Part X, p. 29.

Wachero; a cord is used for this purpose. This custom must date back a long time, for I am assured that Kwandedi and all his ancestors, who died in their huts, were put an end to in this manner.

The dying king is guarded in his hut by the Wachero, who allow none to enter. An exception, however, is made in the case where the king is taken suddenly ill, when his Wakhalivu elders are admitted, in order that they may learn his last wishes regarding the succession to the kingship and receive his instructions on other important tribal matters.

VII.—*The King's Successor.*

The king himself chooses his successor from amongst his sons, and communicates his choice to the Wakhalivu elders, who may not divulge the secret to anyone during his lifetime. Should they do so, the son selected will die. The eldest son is not necessarily chosen.¹

The king also nominates a second son to act as co-chief² with the first. I am not quite clear as to what particular position this other chief occupies or what his duties are. But I take it that in the event of the king dying without male issue, or if the son selected to succeed him were still a minor, the office of king would devolve upon the junior chief.³

VIII.—*The Sacred Spears and Copper Bracelets.*

The principal chief succeeds to all his father's *regalia*, such as the sacred spears, Wanga's copper bracelet, the leopard-skin cloak, etc. Great importance is attached to this copper bracelet; by virtue of its possession alone does the king hold office.

On his death it is taken off by the Wachero and given into the custody of the principal Wakhalivu, who guard it jealously, until the time has come to place it upon the new king's wrist.

I have related how Kweyu, on the death of his father Sundwa, stole the bracelets and the ten sacred spears. Six of these spears were subsequently returned and are now in the possession of Mumia; the remaining four are still with Tomia. Tradition has it that the recovery of the copper bracelet was in this wise. Shortly after Kweyu fled to Shimuli, Mukoya's sister paid a visit to his village and slept the night there, and in her sleep she dreamed that something touched her on the ear, and waking she found it to be this bracelet, which she thereupon took and, wrapping it up in grass, hid, and then sent word to Mukoya, who sacrificed a goat as a thank-offering to the spirits of his ancestors, and rewarded his sister with a present of cattle.

¹ Mumia, for instance, is the fourth son of Skiundu.

² He is not strangled, but is allowed to die a natural death.

³ Mumia's brother Nanjira is the present holder of this office; in Skiundu's time it was his (Skiundu's) brother Nafukho.

Several other copper bracelets of lesser importance were taken by Keweyu at the same time; these are all still in the possession of his descendants, and were seized by Wambani when he attempted to usurp the chieftainship from Tomia. They are now distributed amongst Sakwa's various sons.

All sorts of superstitions have been woven round Mumia's copper bracelet by the common people, who regard it with the very greatest awe and reverence. One of these is to the effect, that if the king wish to cause the death of anyone, he can do so by striking together, at dead of night, this bracelet with another one he wears on the other wrist; pronouncing at the same time the person's name.

The sacred spears are of a very great age, and several of them are of peculiar pattern and workmanship unlike any I have ever seen in East Africa. The others are, I am inclined to believe, spears with which former kings have slain men in battle.

The leopard-skin cloak and spears are entrusted into the keeping of the king's mother, or, if she be dead, to his principal wife. It is believed that a person can cause civil war and domestic strife throughout the Kavirondo country by taking them outside and pointing with them in different directions; for this reason they are always carefully guarded. When they were shown to me, I was told that they had for over ten years not been taken out of the hut, where they are wrapped up in grass and tied to the centre pole. Only the chief, his wife, or mother, and a circumcized Mkhaliyu, whose age is of no consequence, may handle them.¹

IX.—*The Funeral of the Dead King.*

The funeral celebrations of the dead king are very similar to those of the common people; but the manner of his interment is quite different. Only the Wachero and a few very old women are allowed to enter the hut in which the body of the dead king is lying; and by them all the offices of the dead are performed.

The corpse is wrapped in the hide of a newly slaughtered bull and buried in a sitting position in the chief wife's hut, with the head above ground.² A tube for sucking up beer leading from an empty beer pot is stuck in the mouth, and an inverted bowl is placed over the head.

The chief wife keeps guard in the hut for twenty days, after which the roof is broken down; as soon as the head commences to decay it is covered over with earth.

A year later the Wachero dig up the bones, and after washing them in water and anointing them with butter, wrap them in the raw hide of a bull. A great procession is then formed to Matungu, the burial place of the kings, where the

¹ After they were shown to me Mumia had on the first occasion he visited his mother to sacrifice a goat and perform various rites in order to avert any evil effect that might be caused by their removal from the hut.

² *Vide infra*, 2, Part X, p. 29.

bones are finally deposited.¹ The grave is marked with a few small stones and periodically visited by the new king for purposes of sacrifice.

Unlike most such cemeteries Matungu is undistinguished by any special natural features. Neither rocks nor trees mark the spot, and it took me one whole hour to find it although assisted by guides.

No uncircumcized native may approach the place.

X.—*Circumcision and Coronation of the New King.*

As I have said before, the reigning king himself chooses his successor and communicates his choice to the Wakhalivu. The nomination, which up till now has been kept a deep secret, requires, however, yet to be ratified in the following manner: At the funeral celebrations a bull is killed, in the hide of which the corpse is wrapped. The king's nominee is given a spear and instructed by the Wakhalivu to kill this beast. The son appointed to act as co-chief holds the bull by a rope round its neck, whilst his brother spears it behind the shoulder before the door of the hut, in which the body of the late king is lying; the dying animal must then bolt inside the hut and falling on the corpse there expire; otherwise the late king is presumed to have reconsidered the matter. Thus is his choice made known to all the people.

But no uncircumcized person can become a chief or wear a copper bracelet, and three months after his father's death the new king is accordingly circumcized, together with representatives of all the different clans practising this rite. The operation takes place in his village, where all those who undergo it remain till their recovery. The members of the Wakhalivu, Wachero, and Washikava clans occupy the same hut as the king during this time.

Six months later the remaining brothers are circumcized, each in his own village, together with others of the different clans; all those operated on at the same time remaining together in the same village until convalescent.

A year later the dead king's bones are interred at Matungu. The new king heads the procession and is surrounded by a great bodyguard of warriors, as a protection against possible rivals.

On his return he makes a present of bullocks to the various clans, and a great feast takes place in his village. The new king and all his brothers, however, enter a hut and remain there for four days. On the night of the fourth day a circumcized Mkhaliu elder places the copper bracelet on the king's wrist and upon his shoulders the leopard-skin cloak, which he wears during the next four days. The king's brothers are then also given their bracelets, each in turn, in the order of their seniority.²

¹ Throughout the Kavirondo country it appears to be the custom to bury chiefs in this manner.

² One elder slips the bracelet on and the other clinches it. At Mumia's coronation this was done by Manda and Kongoti; Malaluwa, not being circumcized, was debarred from officiating.

Outside, in the kraal, the historic spears and royal ancestral stones are exhibited during these four days, and are then entrusted to the keeping of the king's mother or chief wife.¹

XI.—*The King's Mother.*

The king's mother is a most important personage—and possesses great influence over the king in his domestic affairs and in tribal matters.

She exacts large contributions in money and in kind from the king and the Itawkho; and is, in consequence, reported to be enormously rich. Should these contributions not be forthcoming, she threatens to make use of the power vested in her by virtue of her custody of the sacred spears; a threat that rarely fails to have the desired effect.

She also plays a very important part in the reaping and sowing of the crops and in other similar domestic affairs of the tribe.²

The present king's mother is a very old woman called Mamanya; she belongs to the Wamukhula clan of the Marama section of the Kavirondo tribe.

3. WAWANGA CUSTOMS.

The following are some of the more important Wawanga beliefs, domestic manners and customs. Some of these are peculiar to this tribe alone; but the great majority are common to all the Kavirondo peoples, though they may vary in minor details according to the particular section or tribe.

I.—*Circumcision.*

In no case is circumcision generally practised; on the contrary it appears to be entirely optional. Elder sons and only sons are almost invariably circumcized; younger sons but rarely; and it is quite the exception to find a family where every male member has undergone this operation.

II.—*Totemism.*

The clans are exogamous, children take the totem of their father. A man may not marry a woman of his mother's or grandmother's clan.

The Wakhitsetse women appear to have a special clan of their own called, I think, Musuvu; but on this point I can furnish no information. If a man find he has married a woman of the same clan as himself, the following procedure is resorted to. The man and his wife climb on to the roof of the hut and after

¹ No uncircumcized person may sacrifice at these stones, or even touch them.

² *Vide infra*, cultivation of crops, p. 48.

swallowing a blue bead both cry out: "Now we have no longer any clan." Descending they enter the hut and shut the door. An old man then comes to the door and calls to them: "Come forth now, for you have no longer any clan"; and they leave the hut and sacrifice a white goat, from the belly of which a strip of skin is cut with which the man ties his right hand to the woman's left hand; this is then severed. After this they may live together as man and wife.

III.—Religion.

The Kavirondo religion is a form of theism combined with ancestor worship. The latter plays by far the most important part in their religious lives. To their ancestors they make sacrifices and offer up prayers on all domestic occasions.

In every village and on the path leading to the village, small stones, usually oblong in shape, are to be seen. There are stones erected to Were (God) and to the ancestors.

There are three kinds of such little temples: the Msambue, the Mukurru, and Were.

(a) *Msambue*.—These are the stones put up to the male ancestors. Their place is facing the door of the chief wife's hut; a miniature hut is usually erected over them.

During his father's lifetime a man may not have his own Msambue; if he wish to pray or sacrifice to his ancestors, he must do so in his father's village.

On the death of the father, the eldest son succeeds to the Msambue stones, one of which he usually retains for his own use; the rest he gives to his younger brothers, who supplement them with stones taken from the bed of a river. If the father die whilst his children are yet minors, his brothers or some other elderly male relative of the family take charge of the stones, until the sons are grown up.

The Msambue stones are usually three in number. If there be not sufficient stones for all a man's sons, the elder ones will add a few extra ones to those of the father, and as their younger brothers grow up, they give them one of these.

(b) *Mukurru*.—Mukurru is the stone erected to the maternal spirits; it is usually to be found under the verandah of the chief wife's hut. When a man dies, his son puts up this stone to his own mother, if she be dead; if she be still alive, it is put away during her lifetime. In such case it is usually deposited in a tree or in some rocky place.

(c) *Were*.—Women also erect stones to their ancestors. Just off the pathway leading to the village is the spot selected for Were's stones; as a rule only one is put up; but when a Kavirondo crosses the Malaba River for the first time he takes a stone from the bed of the river and deposits it alongside Were's stone.

(d) *Sacrifices*.—The following is a common form of sacrifice: A young bull calf is selected and its ears are cut off and placed at the Msambue (or sometimes at

Were). This bull is now a kind of sacred beast, and should any member of the family fall sick, it is brought to him and its urine sprinkled over him, whilst at the same time the ancestral spirits are called upon to cure him.

It would be a dire calamity were this beast to be lost or stolen¹; and the least that could be expected would be that one of the family should fall sick.

When the bull is full grown,² the members of the family assemble and sacrifice it to the ancestral spirits. Its blood is poured out at the Msambue; the lungs, tongue, hoof of the right foreleg, stomach, liver, windpipe, etc., are boiled together in a pot inside the hut and then cut up. Some of this is placed at the foot of the Msambue and at Were's, and some is thrown out in different directions in the kraal to the ancestral spirits, each of whom is called upon by name. The remainder is given to the women and children to eat.

Such sacrifices as this may not be made by a man during his father's lifetime.

Sheep may not be offered as a sacrifice; neither may any female stock be offered at the Msambue.

Further details regarding sacrifices will be found in the following accounts of burials, marriages and superstitious customs and beliefs.

I regret that I am unable to go into the question of sacrifices offered by the chief on behalf of the whole tribe.³ These appear to be of great interest and would be well worth the trouble of investigating.⁴

(e) The Wawanga have certain sacred rites connected with the python, similar to those described in my Kabras paper.⁵ Straw images of these snakes with a pot of porridge or beer and perhaps a few feathers stuck in the ground beside them are often to be seen in the villages. In such case someone in the village has recently met a python and offered it food or a fowl, and on his return has made this image of it.

IV.—*Births.*

At her first confinement a woman stays in her hut for four days; on the night of the fourth day her husband sleeps with her in her hut, and in the early morning before cockcrow the woman sweeps all the grass and dirt in the hut into a basket, and she and her husband proceed to the river, where her husband selects a spot in the long grass for her to deposit the contents of the basket. After this they return to the village. Both going and coming the husband walks in front, the woman following behind.

¹ I mention this, because I have known at least one case where such a beast was seized in payment of a debt.

² Not necessarily immediately it is full grown; sometimes it is not sacrificed until old age.

³ *Vide infra*, cultivation of crops, p. 48.

⁴ *Vide* Appendix A, (g).

⁵ *Vide* separate paper on Kabras (Totems).

Nothing special is done with the basket, *i.e.*, it is not burnt or thrown away.

On her second confinement the woman goes alone.

If the child be illegitimate, the woman's mother takes the place of the father. If she subsequently marry, her husband accompanies her on the occasion of her first confinement since the marriage.

The umbilical cord together with the afterbirth is buried by the mother at the back of the hut on the day of the birth; the umbilical cord above, the afterbirth beneath; should they be placed *vice versa*, it is believed that the woman will bear no more children.

A woman who has borne twins may not look at a cow in calf for fear the milk will dry up. Should this occur, a medicine-man is called in, and he makes medicine in a pot and places it over a fire until the contents boil over. It is then taken off, left to cool, and given the cow to drink. The medicine-man receives a fowl for his services.

In a village, where a woman has borne twins, a warthog's tusk, a hartebeeste's hoof or a piece of buffalo horn is hung round the neck of a cow in calf to avert any evil effects; this charm is removed once the calf is weaned.

Similarly a mother of twins may not cut grain at harvest time or sow seed in the plantations without first taking special precautions to counteract evil effects.

Again, if she pass by fermented grain, for making beer, spread out to dry, she must spit upon it and take some in her mouth and put it back; otherwise the beer will be spoiled.

Such a woman, therefore, smears white clay on her temples and forehead whenever she goes on a visit to another village, and this is supposed to counteract the evil effects of her presence. She does the same when she goes to reap or sow the crops.

A pregnant woman may not eat meat called *Ivechi*,¹ if it has been placed in her hut overnight in an uncooked state; otherwise the child, when born, will be sickly; and when it commences to crawl, its hair will fall out, and sores will appear on its scalp.

V.—Burials.

The Wawanga bury all their dead—males lying on their right side, females on their left; married men are interred in the chief wife's hut, between the centre pole and right wall, looking towards the door; that is to say, feet at centre pole, heads towards wall. Women, children, and unmarried males are buried under the verandah of the hut—males to the right, females to the left of doorway; in both cases the feet towards the door, the head away; thus as in accompanying diagram.

It will thus be seen that all corpses are interred so as to face the doorway,

¹ Some portion of the stomach, perhaps the spleen, *vide* totem of Wareka clan, Appendix A.

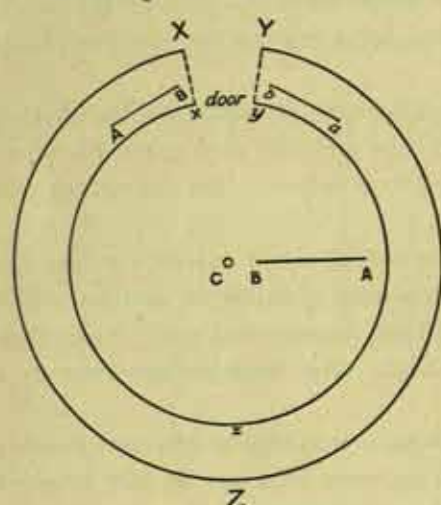
the idea being, I presume, that the spirit of the departed person may not be cut off from the society of friends and relatives.

An exception is made in the following cases: Persons killed by lightning and

monstrous abortions are buried in swamps.¹ By monstrous abortions I mean children born, say with two heads, or with too many limbs, etc. Ordinary deformities are allowed to live.

Suicides, and people who have come by a violent death, are buried in the kraal and not in the hut, even though death actually takes place some time after the infliction of the wound. A man dying from a blow from a knobkerry is usually buried outside, but, if he be brought back to the hut and die some two or three days later, he is buried as he would have been, had he died a natural death.

A drowned person is buried, when the corpse is recovered, on the spot where it was found.



| | | | |
|-------|---------------------|-------|-------|
| X Y Z | Verandah of hut. | A ... | Head. |
| x y z | Wall of hut. | B ... | Feet. |
| A-B | Male corpse. | a ... | Head. |
| a-b | Female corpse. | b ... | Feet. |
| C | Centre-pole of hut. | | |

Anyone discovering the corpse of a suicide is rewarded by the relatives with anything from a goat to a cow; the reward varying, presumably, according to deceased's wealth and importance.

The finder of a drowned person is rewarded with a cow and may claim every article of property in the dead man's hut.

In both the above cases he is also given a sheep to sacrifice on the spot where he found the corpse.

No reward is paid for finding the body of a person killed by lightning, murdered, or dying a natural death.

A man's grave is dug by his brothers and brothers-in-law; a woman's by her brothers; her husband's brother removes the earth.

If a man has lain sick for a long time, and on the day of his death any friends or kins-people come to visit him and find him already dead, they are permitted to dig his grave.

A child's grave is dug by the grandfather or by an elder brother. A new hoe is used in digging the grave of a grown-up person and becomes the property of the man who dug the grave.

A child's grave is dug with an old hoe, which the mother afterwards presents to her father. After the grave is dug and the corpse interred, the hoe is detached

¹ The idea of burying in such cases in a swamp is presumably to prevent the ghost returning to the village; it being naturally difficult to escape out of a swamp.

from the handle, and both are left lying on the grave, together with the grass rope and basket used for removing the earth, until the funeral is over.

The hoe before being given away is left lying in the hut for four or three days¹ after the funeral ceremonies.

When the corpse has been deposited in the grave, the person who dug the grave first throws in a handful of earth from each hand, next the person who removed the earth, and next each wife, beginning with the chief wife.

The two men who dug the grave then fill it in; they also deposit the corpse in the grave.

A leaf of a tree called Mutoto is placed underneath the ear, on the side on which the corpse is lying, and two leaves on the other ear. These leaves are perforated so that deceased may hear what is being said.

In the right hand and stretching upwards out of the grave is placed a stalk of the wild eleusine grain. The protruding end is bent down and covered over with earth. This is done by the man who dug the grave, and the corpse, if that of a male, is thus addressed by some old man: "Do not be angry with us, but die as all men must die, and leave your hand pointing upwards, that your children may grow up, and your wife, if she be pregnant, may bear a child and call it by your name, and your sons will also call their children after you."

A woman is addressed in the same manner by her husband or some old man, who also adds, that her husband will marry another wife and will call the new wife by her name.

The funeral celebrations last, in the case of a male, four days, in the case of a female, three days. During this time the door of the hut remains open, in order that the spirit of the departed person may not be cut off from the company of relatives and friends. Until the corpse is buried, the dead man's wife, or if it be a woman, her husband, and relatives remain in the hut and during the night following the death set up great lamentations; but once the corpse is interred they lament by day only.

Immediately after the death the wives or other female relatives pour grain and fermented millet over the corpse. This is swept up before burial and thrown to the fowls.

Before the interment, deceased's sister, or some old widow, fetches water from the river, and placing the body with the head in the doorway, shaves the forehead and temples. The water used for this purpose must be fresh from the river; the pot containing it is placed upon the grave and, after the funeral service, given to the person who performed this office.

Grown up people are buried in the morning before 10 a.m., but children may be buried at any hour. After the burial all present proceed to the river to bathe; until they have done so they may not enter any hut but that of the deceased. On their return a fire is lit on the grave over the feet. This fire is kept burning for

¹ According as deceased was a male or female.

one whole month. Should it go out, it must be re-lit from the fire in the hut; should this also be extinct, it must be lit again by means of a fire drill.

The following days are occupied in everyone shaving their heads; water for this purpose being taken from the same pot as that used in shaving the corpse. When finished with, the remaining water is poured away and the empty pot left standing on the grave. In the evening, a fowl, a cock in the case of a male, and a hen in the case of a female, is killed by the man who dug the grave. The head is first struck upon the grave and then on both door-posts and on the ground between them. It is then roasted at the fire on the grave and eaten by all those who helped in the digging. The last day of the funeral celebrations a bullock, goat, sheep or fowl, according to deceased's wealth and importance, is killed and eaten with porridge.

The following is more or less the chronological order of the funeral celebrations:—

(a) *If a male.*

First day: corpse is buried; everybody bathes; fowl is killed in the evening; great lamentations.

Second day: lamentations only.

Third day: lamentations; mourners shave their heads.

Fourth day: kill a bullock, or other animal, and sweep up.

(b) *If a female.*

First day: as in case of a male.

Second day: mourners shave their heads.

Third day: as fourth day in case of a male.

After the funeral the hut is cleaned; the dirt, together with the hoe handle, etc., is swept into an old basket and burnt, just off the path leading to the village.

The dead person's sleeping skin is given to the man who removed the earth from the grave. He takes and washes it when they go to the river to bathe after the interment. A child's sleeping skin is destroyed together with the basket and hoe handle.

At the funeral lamentations one wife dances with the dead man's beer pot and sucker; another with his chair; another with his spear and shield; another with his clothes; another with his bead head-dress. If there be only one wife, she dances with these things by turns.

Immediately after the death the widow cuts off her tail, and leaves it on the floor of the hut. After the funeral celebrations, and so long as she remains a widow, she wears a shabby tail made of banana leaf fibre—the one discarded at her husband's death she must never wear again. It is usually given away to some one else to wear.¹

¹ Regarding this article, *vide infra*, marriage customs, p. 42.

The dead man's chief wife¹ remains in the hut, where the body is buried, during the following two months for the purpose of tending the fire. After this the hut is broken down and the timber is used as firewood. Stones and thorny branches are placed upon the grave. If the body be buried under the verandah of the hut, a lily called "Ikakha" is placed upon the grave to keep off the hyænas.

The following season, when the eleusine grain is sown, a dance takes place and sacrifices are made to the dead person's spirit.²

The dance lasts, in the case of a married man, four days; in the case of a married woman, three days, and in the latter case is not nearly such an important function.

The men dance with their shields and spears, and the women don their smartest tails.

The first two or three days, as the case may be, the dance takes place in the evening at sunset and lasts till about 8 p.m.; but on the last day dances last from cock-crow till late in the afternoon. On the last day also sacrifices are offered to the spirits of the departed and to Were.

A pot of beer is brought, and one of the dead man's brothers pours a little over the grave saying: "Drink this beer we have brewed for you," the kinsmen then consume the rest of the beer.

If the grave be that of a woman, her female relatives perform this rite. The same ceremony is then gone through at Were and at the Msambue: the relatives calling upon Were and the spirits of the dead and pouring out libations to them. In the case of a woman this ceremony is performed at the Mukurru instead of at the Msambue.

A bullock is then slaughtered and its blood poured over the grave. The ears, nose, wind-pipe, tongue, lungs, stomach, liver, the right hoof and the meat under the backbone are put in a pot, boiled and cut into small fragments; these are then tied all round the grave, and at Were's and the Msambue stones, where the dead man, Were, and the souls of the departed ancestors are thus addressed:—

"Were, you are our eyes, accept this food, and keep us in good health."

"See, brother, we have brought you this food, eat and be not angry with us and send us good health."

At the Msambue the ancestors are invited to feast with them and to join in the dance.

In the case of a female an old or barren cow is killed instead of a bullock. Blood is poured upon the grave, but no meat is offered. Instead of sacrificing at the Msambue, this is done at the Mukurru.

If sickness occur in a family some years, say two or three perhaps, after the death of any member, the medicine man will sometimes attribute it to the spirit of

¹ Failing his wife, some other relative, such as brother, performs this duty.

² This is only done in the case of a married person. If the relations cannot afford it, they may wait one or two seasons before holding this ceremony.

the deceased person. His relatives and kinsmen accordingly brew beer and kill a bullock ; or a cow, if deceased was a woman.

A great dance, which lasts till early morning, is then held, at which much drink is consumed. At about 4 a.m. libations are poured out at the Msambue and to Were and at the Mukurru stones under verandahs of the hut.

If deceased was head of the village, the inhabitants after this usually abandon the place and build elsewhere.

Again if a man fall sick, and in delirium call out the name of a departed relative, the sickness is usually attributed to his spirit, and the medicine-man will tell them to dig up the corpse, that the sick man may be cured.

Accordingly the bones are dug up and burnt in an open place over a red ants' nest. The ashes are then swept up into a basket and thrown into a big river.

The corpse is dug up by a very poor old man, who is rewarded for his services with a hoe or one rupee and the fore leg of the sheep killed on these occasions. He also superintends the destruction of the bones and throws them away.

If when the corpse is dug up the flesh is found to be dried up and only the stomach rotted away, it is considered a very bad sign.

Sometimes instead of disposing of the corpse in this manner a stake is driven into the head of the grave, and into the hole thus formed boiling water is poured. The stake is left lying on the grave. The corpse being thus disposed of, a black ram is killed, and all the dead person's relatives rub dung from the stomach of the slaughtered beast on their chests and tie strips of skin round the right wrist ; the head of the family, in which the sickness occurred, ties a strip round the second finger of his right hand and the sick person a strip round the neck.

VI.—*Marriages.*

When a man wishes to marry, he makes a present of a bullock to the father¹ or nearest male relative of the girl.

After say one and a half months he makes a further present of a cow and a bull and again a few months later of a cow and two bulls ; and lastly of a cow.²

After these preliminary payments the bridegroom proceeds with at least four of his kinsmen to the bride's village and there seizes her by force. The girl at once commences screaming for help, and in answer to her cries the women of the village come running up. The bridegroom beats and drives them off with a stick. The girl is then carried away to the village.

In the evening the bride's girl friends and relatives proceed to the bridegroom's hut, where they are witnesses to the consummation of the marriage and the bride's virginity.

¹ By father I mean the girl's actual father or male guardian.

² If the suitor for the girl's hand be a rich man, he probably pays the whole of the marriage price at one time.

The following day they return to the village singing; leaving behind, however, a young sister or other girl friend to bear the bride company.¹

Next day the women and young girls from the bride's village form a procession to the bridegroom's village. They march singing and carrying with them fowls, goats, porridge flour, and four pots of beer. On arrival they perform a dance and sing.

Before entering the village they conceal a pot of porridge off the road and post a sentry over it. On their departure the bride accompanies them, and all partake of this porridge. The bride then returns to her husband and the rest go home.

If the bride be not seized by force, she proceeds of her own accord—carrying her father's spear and accompanied by many virgins—to the bridegroom's village.² One of her brothers heads the procession with a pot of beer.³

Before her departure her father ties a live male quail round her neck, after breaking its legs and wings. This bird the bridegroom, on her arrival, takes and roasts at the Msambue, after which it is eaten by the children of the village.⁴

He then ties another quail round her neck. This bird is cut off the following morning, leaving behind, however, the beak, and is then roasted at the Msambue. The bride wears this beak round her neck until the ceremony of the goat skin has been performed as described below.

Should the bird die during the wedding night, it is considered a very bad omen: the bride will fall sick and her children die.

The party waits outside the village singing, until the bridegroom sends out a hoe as a present for the bride's father. They then enter and proceed to the door of the hut, where they remain until the bridegroom produces a goat as a further present to the bride's father. All then enter the hut, the bride's brother going in first; and the bridegroom's relatives, but not the bride's, are given beer to drink.

Everybody partaking of this beer presents a piece of iron wire or a string of beads to the bride's brother.

The bride is then anointed with fat, and "sim-sim" seed is sprinkled over her. Her brother then returns to the village, taking with him the spear.

The following (the third) day the marriage ceremony is performed in this wise: A he-goat is killed and a long strip of skin is cut from the belly. The bridegroom's grandfather, or some other elderly male relative, standing with the bride at the Msambue, splits the skin up its length and passes it over her head, so that it hangs down over her chest, saying: "Now I have put this skin over your head; if you leave us for any other man, may this skin repudiate you and may you become barren," and she replies: "If you do not marry me properly (*i.e.*, pay the full marriage price according to law and custom) I shall leave you for another husband."

¹ *Vide infra*, p. 42.

² The women decorate themselves with feathers and carry shields.

³ A kind of grass called Lombobo is tied round the pot of beer and also below the blade of the bride's spear.

⁴ *Vide infra*, remedies against sickness, p. 44, regarding this custom.

The meat of this goat, with the exception of one shoulder, is taken to the bride's father by the bridegroom's wives or sisters.

The following day the bridegroom kills a bullock, which is cut up by the bride's brothers, who are given the neck, haunches, and skin.

The bridegroom keeps one shoulder; the rest of the meat is given to the bride's female relatives.

Two days later the bridegroom kills another very big bullock, of which one leg and the back are sent to the bride's mother; the bride makes biltong of the remainder of the meat, some of which she sends to her mother; the rest she keeps for herself.

On this day, too, the bridegroom makes the bride a present of a bullock, four goats, ten hoes, or ten rupees, beer and grain, all of which she sends to her father.

On this day also she is given a variety of presents, which she passes on to her father. Thus when she first drinks water she receives a ring of iron wire, or the equivalent in money;¹ a hoe, when she makes the bed; five strings of beads, when she goes to get firewood; four strings of beads, when she digs sweet potatoes; one string of beads, when she cuts bananas; two rings of iron wire, when she makes up the fire in the hut; a hoe, when she shuts the door; another, when she places the cooking pot over the fire, because the fire being hot she might scorch her fingers²; one ring iron wire, when she crushes grain; eight strings of beads, when she washes her hands; two hoes, when she drinks beer; two rings iron wire as compensation for any dust or dirt that may fall into her eye when gazing up at the roof of the hut; three rings of iron wire on the first day she works in the plantations.

A month later, when the bride wishes to return to her mother for the first time, she takes her stand upon a new bullock hide outside the door of the hut and is anointed with butter upon the neck and shoulders and then sprinkled with sim-sim seed. Together with her husband and ten women of her family, and ten men of his family, she then proceeds to her mother's village, all of them singing by the way.

On reaching the village the party comes to a halt outside, and the bride's mother brings out a pot of beer which is drunk by the ten women. The father now sends out a goat and a hoe, and hereupon the party enters the village, and all but the newly married couple go inside the mother's hut. The latter, together with two small children, one a brother of the husband, the other a sister of the wife, remain standing outside the hut, the wife on her husband's left, with his brother on her left, her sister on the husband's right. The bride's mother now brings out porridge and meat, which is eaten by the wife and two children. She then brings out a drinking gourd containing beer, into which she mixes some sort of medicine.

All four now sit down on the ground. The husband, taking a mouthful, spits

¹ Payment in kind is gradually giving way to payment in money.

² The idea underlying these gifts would appear to be that they are in some way compensation for all the domestic worries and troubles her future life may hold in store for her.

it out on his right side, and another mouthful which he spits out on his left side. The bride's sister then does the same; next the husband's brother, and last of all the bride.

Hereupon the husband enters the hut and joins the others, who are feasting and dancing; an old woman now appears and pushes the bride twice towards the door; the third time she pushes her right inside.¹ The two children then enter too.

The whole party now feasts and rejoices until the early morning, when the bride's father produces a bullock, which is killed by the visitors and eaten by all present. The husband, however, does not join in the feast until the father has given him five hoes.

After this the guests take their departure; but the newly married couple and the two children sleep the night in a hut in the village, returning all four of them the following day to the bride's new home.

During the first six months of her married life the bride does not have a hut of her own, but lives in the hut of one of her husband's other wives. They now request permission from the bride's father to build a hut; this is not granted until the full marriage price has been paid. The father accordingly now demands two cows and a bull and a long wrangle as to the payment then ensues, which usually ends in the bridegroom giving way.

The two cows in question go to the bride's maternal uncle.

When the building of the hut is completed, the bride's father makes a present of a bullock, grain, cooking pots, a broom for sweeping out the hut, a quantity of firewood, eight pots of beer, ten fowls, three baskets of flour and some basketwork plates.

A great procession of women is formed to bring these things. They come singing and dancing; a young boy accompanies them leading the bullock. The husband kills a goat and gives it to the women to eat, keeping a shoulder for himself; the wife does not join in the feast. The goat is eaten in the hut, before entering which singing and dancing take place outside.

The wife may now cook her husband's food in her own hut; but she may not cook food for herself nor eat there until ten days have gone, when her husband gives her a hoe. Neither may she sweep out her hut until her mother has been to see her; this the mother does after about a month, bringing with her six pots of beer, a goat, six baskets of flour, and three bundles of firewood.

On her arrival the husband gives his mother-in-law beer, brewed by her daughter, to drink in the hut and himself drinks her beer. He also gives her a goat in exchange for the one she has brought him and flour for her flour.

Although the mother may drink beer in her daughter's hut she may not yet eat food there, neither may her daughter cook for her. The following day mother and daughter sweep out the ashes from the hut, and the young girl, who originally accompanied the bride, returns with the mother after receiving a present of a hoe.

¹ This is in some way an allusion to the three days' funeral celebrations for a dead woman.

Apparently the reason for this girl remaining with the bride during this time was, that one or other of them might always be in the hut to prevent anyone entering with the object of stealing ashes. Should such a misfortune occur, the bride will never bear children or she will quarrel with her husband.

In ten days' time the husband sends once more for his mother-in-law, and she comes, together with six old women, bringing with her beer. The husband also produces beer and kills a very big ram, which she eats in company with the other old women. The ribs and stomach are consumed in the evening; the back, shoulders, and chest the following morning; the remainder of the meat, with the exception of one shoulder retained by the husband, they take with them when they return.

The husband now gives his mother-in-law a hoe, and henceforth she and her daughter may eat together.¹ Somewhere about this time also the mother is given a good milk cow to compensate her for the loss of her daughter.²

A woman does not wear a tail until she becomes pregnant for the first time after her marriage. She herself makes the tail, and when she dons it for the first time her husband presents her with a she-goat to give to her father.

When a woman is past child-bearing, her husband may no longer sleep in her hut; if he enter her hut he must sit on the side opposite the kitchen.

VII.—*Trials by Ordeal.*

(a) When chiefs or very important elders quarrel or accuse each other of witchcraft, theft, etc., they resort to a form of trial by ordeal that consists in placing the king's six sacred spears upon the ground, and both parties then step between them. The guilty party will die.

(b) A medicine man makes a potion, which he administers to both parties. The one falling down insensible after drinking the potion is pronounced to be the guilty party. If both fall down the medicine has failed to work.

As a rule when one of the two falls down, the hostile party will beat him with sticks and not infrequently cause his death.

This is a general form of trial for all offences.

(c) *For theft*: if a man accuse another of theft, either party may take a skull, and both accused and accuser then spit into it. If the accused be guilty, he will die, but if not his accuser will die.

This form of trial is scarcely ever resorted to, it being, I gather, regarded in the light of an impious temptation of providence.

(d) *For theft*: the accused takes droppings of a fowl and places them on the ground before the door of his accuser's hut, saying: "If I have stolen, may these droppings kill me." If guilty he will fall sick; but if innocent the inmates of the hut will fall sick. In such case the accuser will send for the man he accused, and the latter brings the fowl from which he obtained the

¹ On this occasion there is no singing or dancing.

² *Vide* Appendix A, (b).

droppings and killing it lets the blood drip on the spot where he put them, saying: "You accuse me of being a thief; now I have brought the fowl that caused your illness, eat it, that you may recover; but pay me compensation."

Both parties then eat the fowl; the bones and feathers are burnt and the ashes thrown into a stream.

Should the man who invoked the trial not recognize the fowl, all the birds in the village are killed and eaten; every man killing his own fowl. The bones and feathers are then collected together and burnt.

The accused party, whose innocence has thus been proved, receives in compensation anything from two sheep to a bull.

The procedure is the same in the case of the accused man falling sick.

(e) *For theft*: accused and his accuser proceed to a tree called Murembe¹ into which the accused man thrusts his spear; his accuser is then called upon to pull it out.

The guilty party will fall sick and will not recover until his relatives have completely rooted up the tree; a sheep is sacrificed and eaten on the spot together with some medicinal concoction; every one ties a strip of skin from the sheep round the right wrist. The sick person ties it round his neck and rubs some of the dung of the slaughtered beast on his chest.

If the innocent party be sufficiently powerful to prevent it, he will not allow the other party to dig up the tree until adequate compensation has been paid him.

Sometimes instead of the Murembe tree, a tree called Murumba, the bark cloth tree of Uganda, is made use of.

(f) *For theft*: the following form of trial by ordeal is employed by women only. The accused takes a stone used for sharpening razors and striking it on the ground before the accuser's hut says: "If I have stolen, may this stone kill me." If she be really guilty, one of her children will die; or if she be pregnant, she will abort; if she have no children, she will herself fall sick. Her husband will in such case sacrifice a sheep² or a goat, and, if the latter, they will eat it together.

VIII.—Witchcraft.

(a) Any one wishing to harm a neighbour can do so by procuring a chicken's first egg and hiding it in the grass near the hut. The occupants of the hut will fall sick and may even die. Any one finding an egg near his hut and having reason to suspect witchcraft of this description at once consults a medicine man.

Should the medicine man confirm his suspicions, the following remedy is resorted to: A fire-drill is procured and held above the egg until fire is produced. The egg is roasted until it cracks, and the contents are then burnt; the ashes are swept into a basket and thrown into a big river. They must not come in contact

¹ Ekiriti tree of South Africa: *Erythrina tomentosa*.

² Women may not eat the flesh of sheep; *vide infra* Part XIII, Other Customs, (e), p. 49.

with anybody and are therefore swept up with grass. A cock is then killed, and the blood poured upon the spot where the egg was found; after which it is roasted and eaten by the person who produced the fire, and the person against whom the witchcraft was made.

The man who concealed the egg will fall sick and die. This form of magic is very effective, and if the guilty person be detected, he is taken before the chief and heavily fined (six hoes and a bullock).

Should his victim die, he pays three or four head of cattle.

If the egg be an ordinary one, and this ceremony be performed, the persons doing so will fall sick; it is advisable, therefore, always first to consult a medicine man.

(b) Another form of witchcraft is to place secretly the dead body of a domestic rat in the doorway of a hut; the people occupying same will fall sick, and may even die; especially small children; pregnant women will abort.

If the body of a rat be discovered in this position and the owner of the hut has reason to suspect witchcraft, he consults a medicine man, who directs him to kill a red or white cock and to pour the blood on the spot, where the rat was found.

Before killing it, the owner of the hut takes the fowl by the leg and brushes each member of the family with it on the chest.

If this ceremony be performed unnecessarily, that is to say without consulting the witch-doctor, the people themselves will fall sick, and will not recover without his assistance.

In such case the witch-doctor kills a sheep, and gives them medicine to drink, and ties a piece of skin round each person's hand, and rubs dung on their chests.

The medicine man is given the whole of the meat with the exception of one shoulder.

If proper remedies be resorted to, the evil intended to the occupants of the hut will recoil upon the person himself; and if he be detected, he is fined a bullock by the chief.

IX.—*Remedies against Sickness.*

(a) When a medicine-man is called in to cure a sick person, he sometimes gives instructions to perform certain rites with a quail. The procedure varies according as to whether a hen or a cock bird be chosen.

(1) *If a hen quail.*—If the patient be a male, he himself performs the ceremony; if a woman, it is performed for her by her husband or some other male relative.

After both legs and wings have been broken, a string is passed through the under-beak, and the bird is suspended round the patient's neck, whilst the ancestral spirits¹ are thus addressed: "This is the custom, that we follow with this bird; if this person be cured to-day, we will give it to you to eat."

¹ The medicine man gives instructions as to whether the male or female ancestors are to be addressed.

The under-beak is then severed from the body and left hanging round the patient's neck, where it remains during the following four or three days according as the patient is a male or female.

In the case of a male the ceremony is performed at the Msambue; in the case of a female before the door of the hut.

The bird is next plucked and roasted at the Mukurru, or Msambue as the case may be, where the feathers are also burnt; after which the person performing the ceremony takes pieces from the stomach, wings, legs, lungs, and skin of the neck and holding them in the palm of his hand throws them out in different directions; the while addressing the ancestral spirits thus: "Grandfather, great uncle (or grandmother, great aunt, as the case may be), I give you this bird, cure now therefore this patient."

The remaining flesh is then cut up into small fragments and put in a basket upon the patient's head; a number of small children come, and each takes a piece out of the basket and eats it.

(2) *If a cock quail.*—The bird is roasted at the Msambue and eaten there by the whole family. Male ancestors only are addressed; the rite is altogether much simpler than in the former case.¹

(b) Another remedy for sickness is to catch alive a small animal called "ifukho."² The sick person and relatives assemble before the door of the hut. The person who caught the mole holds it up by one leg and first the sick person and then he himself and then the others each in turn spit upon it saying: "Oh, our ancestors, help us and cause this mole to take away this sickness; we have not got a sheep to give you, but accept this mole, which is as a sheep from the jungle."³

The live mole is then put into a hole in the ground, and an inverted pot is placed over it. If it now burrow its way out in the direction away from the hut, the patient will recover; but, if in the contrary direction, he will die, since the ancestors have not heard the prayer.

(c) If anyone be constantly sick in the stomach, a medicine man is called in, and he takes fermented grain for brewing beer and pours hot water over it. This the sick person has to drink every morning for about a month, after which the dregs are thrown out on the pathway leading to the village in the hopes that some stranger passing by may, by stepping upon them, contract the sickness and thus take it away. They are only infectious, however, so long as they remain wet.

(d) A mother, whose children are sickly or die, places the next infant born to her out on the road leading to the village and arranges with an old woman to pick it up and bring it back to the village. Before doing so, the old woman pierces one of its ears and fastens a bead or piece of iron wire in it, which it wears till it is

¹ Possibly this version is not quite correct, and it may be that, according as the bird is a cock or a hen, the sacrifice is made to the male or female ancestors.

² A kind of rodent mole.

³ The Kavirondo speak of the "ifukho" as the "wild sheep"; although it bears no resemblance to a sheep.

grown up. On arrival in the village, she ties in its hair a wooden charm and a cowrie, which the child keeps until its mother is again confined.

If for any reason it is found necessary to shave the child's head, the lock of hair to which the charm is fastened is kept.

The lock of hair is finally cut off and the head shaved by the old woman who picked it up on the road.

Such a child is given the name of Magokha, or Nanjira. For her services the old woman is given a present of a fowl, some "sim-sim" and chiroko, and a piece of beef.

(c) A man frequently troubled with dreams regarding a dead person consults a witch-doctor, and he will instruct him to procure a white hen¹ and to pluck a few of its feathers and stick them in the ground before the stones put up to Were, and at the same time to offer up a prayer.

After plucking out the feathers the fowl is let loose. It is eventually, how long afterwards I cannot say, roasted and certain rites in connection with the ancestral spirits, similar to those I have described in the sacrificing of a quail, are performed.

Cock birds and also bulls and goats are sometimes used for this purpose.

In the case of the two latter beasts, the ears are placed at Were's stones.

Cures such as this are only resorted to some years after the death of the person whose spirit is supposed to be troubling the patient. In no case is it done until after the final funeral celebrations.²

(f) Sick people may not eat fowls, goats, or eggs.

X.—*Superstitions.*

(a) If a stranger force his way into a hut, and in doing so his skin cloak falls to the ground, or if he be bleeding from a fight, and his blood drip on the floor, one of the inmates of the hut will fall sick, unless preventive measures are taken.

The offending party is required to produce a goat.³ This is killed; before cutting up the carcase the skin is removed from the chest and belly and cut into strips, which everybody in the hut ties round the right wrist.

Should anyone already have fallen sick, the strip of skin is tied round his neck. The strips are first stirred round in the contents of the goat's stomach, and the women and children and any sick persons rub the dung on their chests.

Half the goat is eaten by the occupants of the hut, the other half by the stranger in his own village. Should anyone die in consequence, the offender forfeits a bullock to the relatives.

(b) The same procedure is resorted to in the case where a woman's tail has been forcibly torn off, or if a woman enter a hut without her tail.

¹ Occasionally a black hen is substituted for a white one.

² *Vide* Part III, Religion, (d), Sacrifices, p. 32.

³ In the latter case the man who commenced the fight pays the goat.

(c) A man returning from a raid, on which he has killed one of the enemy, may not enter his hut until he has taken cowdung and rubbed it on the cheeks of the women and children of the village and purified himself by the sacrifice of a goat, a strip of skin from the forehead of which he wears round the right wrist during the following four days.

(d) A woman may cause her husband's death by walking abroad without her tail.

The husband therefore kills a goat, which he is entitled to demand from her people, and eats it in company with his wife, who also ties a strip of skin from the belly of the goat round the neck and rubs some of the contents of the stomach on her chest.

(e) If a fowl lays an egg at night, it is killed and eaten; otherwise it is believed one of the children in the hut will fall sick.

XI.—*Omens.*

(a) Grown-up people going on a journey ask the first person they meet some sort of a question such as this: "What sort of traveller are you?" and the man will reply somewhat to this effect, "I am a person whose first-born child was a male" (or female as the case may be). If the traveller's own first-born child happens to be of the same sex, he thanks him, saying: "Now I shall find plenty of food at my journey's end, and I shall get there quickly." If, however, it happen contrary wise, he will return to his hut and leave later in the day, always provided, of course, he was at the time of meeting still only a short distance from home.

(b) Children when going on a journey tie a knot in the grass, and this they believe will insure them arriving at their destination before the family they are visiting has eaten.

(c) It is lucky, when going on a raid, if the first person met with on the road has borne a female child first.

(d) It is also lucky, when going on a journey, to stumble with the left foot, but unlucky to stumble with the right. When returning from a journey the opposite holds good.

(e) If a man hear a bird, called by the Kavirondo lion, singing on his left, when setting out on a journey, it is a good omen. If the bird sing on the right, it is a bad omen, and the traveller will fall sick, or if he be setting out on a raid he will be killed.

If the bird sing straight ahead it is an extremely bad omen and betokens that either he or some one in his village is about to die.

(f) A man returning from a long journey places his spear in the Msambue and leaves it there for the next twenty-four hours or so.

XII.—*Cultivation of Crops.*

(a) The year is divided into two seasons, Morotso, the season of big rains, and Mulumbi.

Fresh ground is only broken towards the end of the Morotso season. On this fresh ground sim-sim and chiroko are sown the following Mulumbi.

When these crops are harvested, muyimbe is sown the following season in the same ground.

Sweet potatoes are planted in the Morotso season on old mtama ground. White mtama is cultivated in the long rains, red mtama in short rains.

(b) Before the people may sow mtama the king must make medicine.

About six months before the time has come for sowing, a pure white bullock is killed at the royal Msambue.

Formerly this was done by the Wakhalivu, but now it is usually done by Swahilis.¹

The beast is pithed in the neck; the meat is distributed amongst various important old men.

The following month the Wakhalivu strangle a black ram before the hut of the king's mother.²

The carcass is then taken into the hut and placed by the bedside facing towards the head of the bed. The following day it is taken outside and cut up by the Wakhalivu, and the king, his wives, and children tie a strip of its skin round their fingers.

The next day the common people go and sow millet in the chief's fields. After which they may sow in their own plantations.

Anyone caught sowing millet before the chief has done so is fined and may very possibly even die.

No such custom exists in regard to the wimbe crop, but in the chief's own family his mother or chief wife must first commence the sowing; the remaining wives may then each sow their own particular patch.

(c) Every day when people go to cut the wimbe at harvest time they tie the first stalk they cut round their necks. These on their return to the village they fasten to the centre pole of the hut.

After the harvest the stalks so collected are made up into a bundle and placed under the roof of the grain hut, and from them is obtained next year's seed for sowing.

On the first day of the harvest also the head of the family places the four first stalks cut at the Msambue and at Were; two at each.

(d) Should the rain fail, the people make the medicine-man a present of a bullock and request him to produce rain. So long as the drought lasts the chief sends him the humps of all bullocks killed by him; and at harvest time, should the medicine-man have been successful in producing rain, he sends round to all the plantations for a contribution of grain.

If, however, no rains come, the people argue that some other medicine-men

¹ *Vide* Appendix A, (i).

² Or possibly chief wife.

are jealous of him and are working against him. They accordingly go by night to their own medicine-man and kill him.

It is asserted that heavy rains invariably follow his death.

XIII.—Other Customs.

(a) If lightning strike a hut or kill a person or beast, a medicine-man is called in. He asks for a black sheep and having killed it removes all skin and flesh from the skull, into which he puts medicine. The medicine is roasted in a pot, and everybody in the village is given a little to lick up in the palm of his hand. Some is also put into a reed and hidden in the grass of the roof of every hut in the village. The remainder is poured into the skull, which is then buried by the medicine-man, where the lightning struck, he himself digging the hole. With it is also buried a stick from the hut or, in the case of a person or a beast, some grass or earth from the spot where the lightning fell.

For his services the medicine-man is given a hoe and the whole of the sheep excepting one shoulder.

A lily called the "Ikakha" is often stuck on the roof of huts to keep off lightning; this is a very common sight in Kavirondo.¹

(b) In the village of an old man of the Wakhitsetse clan near Mumias I noticed one day a rather curious-looking spear stuck in an ant hill, and on inquiring its purpose I was informed by this latter-day Moses that he used it for driving off hail.

All over the Kavirondo country cows' tails² may be seen stuck upon poles or trees in or near the plantations; their object is to keep off hailstorms.

(c) When a man builds a hut, he places in the trench in which the uprights stand, medicine made of a mixture of cow dung, leaves of a tree called Movini and fresh green grass sprung up in a spot where cattle have been kraaled, whilst at the same time he prays to his ancestral spirits.

(d) Small children may eat their meals with their father, but when they grow up they must eat in the cattle shed or "simba" hut. A son may not eat with his mother, but a daughter may.

Women may not sit on chairs; children may not sit in their father's chair; neither, until they reach the Oluasatsa age, may they sit in their father's presence, but are allowed to sit on a box or log of wood.

A son may not, in his father's absence, enter the hut of any of his father's wives, excepting that of his own mother.³

(e) Women, after they have reached the Muraka age, may not eat sheep, hares, a rodent called "iferre," raw meat, guinea fowl, pig, fowls, eggs, etc.

¹ The same plant as is placed upon the graves to keep off hyenas; *vide* burial customs, p. 37; I believe a cow or a bull's horn is also sometimes used instead.

² I believe they are cow's tails, but am not quite sure on this point.

³ The sin of Reuben is not unknown in Kavirondo families, and for this reason the father usually moves his son into a separate village when he grows up.

XIV.—*Stages in the Life of a Kavirondo (Livaka).*

The following is a rough idea of the different stages into which the life of these people is divided; it is probably not very accurate; it may, however, serve as a basis for others who may wish to collect further information on the subject.

The information was collected from the Tatcheni people, but holds good also for the Wawanga and kindred tribes:—

A. *Males*.—Mwana: age of infants.

Mmiya: age of small boys.

Muraka: age of puberty.

Musoriri: age of marriage.

Mutsatsa: age of married men.

Mukofu: age of very old men.

B. *Females*.—Mutorro.

Mwana.

Mmiya.

Mukhana.

Mukhuviu.¹

Mukhassi: age of women, who have had a child.

Muchere: the age of women, who are past child-bearing.

XV.—*Seasons.*

The following are approximately the divisions of the Wawanga year into months and seasons. Despite every effort to get this correct I failed to do so; and I am driven to the conclusion that the Wawanga have all but ceased to remember their own names for the months:—

A.—*Murotsi: March to August.*

| | | |
|---------------|-----|---|
| <i>March</i> | ... | <i>Omwajiro</i> : commence cultivation; sow chiroko. |
| <i>April</i> | ... | <i>Ommilimiro</i> . |
| <i>May</i> | ... | <i>Liununa</i> : women and children only at work in the fields. |
| <i>June</i> | ... | <i>Ommuchero</i> : Mwimbi harvest; all hands busy building grain huts. |
| <i>July</i> | ... | <i>Muerango</i> : all hands busy threshing grain. |
| <i>August</i> | ... | <i>Ommulchuiro</i> : a month of little work; the women grind up flour for brewing beer. |

¹ The age of circumcision amongst tribes such as the Tatchoni, where this rite is practised amongst women.

B.—Mulumbi: September to February.

| | | |
|------------------|-----|---|
| <i>September</i> | ... | <i>Ommirachiro</i> : work as in March. |
| <i>October</i> | ... | <i>Sirasire</i> . |
| <i>November</i> | } | <i>Eshimiu</i> : hot months, when there is no work. |
| <i>December</i> | | |
| <i>January</i> | ... | <i>Mundau</i> : plant sweet potatoes; women and children do most of the work. The mwimbi commences coming up. |
| <i>February</i> | ... | <i>Omuomuvikhua</i> . |

4. WAWANGA LAWS.

I.—Administration of Justice.

The law, except in petty cases, is administered by the king alone; petty cases may be dealt with by the village elders, who inflict small fines, such as a couple of fowls or a hoe.

The punishments that may be inflicted by the king are:

- (a) Imprisonment for a couple of months with or without hard labour.¹
- (b) Simple imprisonment until the accused pays the fine.
- (c) Imprisonment in the stocks for one month.

Mumia objects to capital punishment and never passes such a sentence; arguing that little good can come from adding a slaying to a slaying.

The king has the right to flog for certain offences, but Mumia does not exercise this right either.

The manner in which fines are disposed of will appear in my list of laws.

It should, however, be noted, that the king has the right to claim the whole of the fine inflicted, should he choose to do so.

II.—Sanctuaries.

Throughout the Elgon district there are certain places where a fugitive from justice may take refuge.

Such spots are usually the burial places of great chiefs and are regarded as sacred²; for instance, the cemetery of the Wawanga kings.

If a man take refuge in a sanctuary, the owners of the same are bound to protect him and prevent others following him, even by the force of arms. As soon, however, as the fugitive leaves the sanctuary, he may be apprehended. Should his pursuers insist on following him into the sacred grove and, in consequence, a fight ensue between them and the owners of the grove, they are fined three head of

¹ Hard labour consists in work in the king's plantations.

² *Vide* Appendix A, (j).

cattle by the chief for violating the spot. Should in such a case the man they are seeking be wanted for murder, he or his relatives are also fined three head of cattle for the crime, but the murdered man's relatives receive no compensation.

Should a murderer or other criminal take refuge in a village and pay the elders a goat or a bull, they are bound to protect him. The chief, however, may call upon the people to produce him, and they will then bring him secretly by night to the chief for trial.

In such case, if the man be too poor to pay the fine, the chief will say to him, "I cannot kill you now, since you have been brought to me"; and he will assist him to escape out of the country, since otherwise the murdered man's relatives may kill him, if they catch him.

III.—*Punishments.*

A.—*Homicide*.—If committed in an affray, the chief despatches his "askaris" to surround the village, and a fine of two cows and two bulls is exacted from the people; both parties then appear before the chief, and the guilty person is fined fifteen head of cattle, of which five head go to the chief's headmen, Ligorri and Nanjira, and the remaining ten head to the dead man's relatives.

The Wakhalivu, who collect the fine, receive from five to ten goats and a few hoes.

Should the man who committed the crime be unable to pay the fine, the relatives of the dead man may kill him, should he fail to escape; should he, however, do so, Mumia will not allow them to pursue him.

B.—*Murder*.—(a) The relatives may seize the whole of the murderer's property or failing that may kill him.

(b) If a man murder his own wife, he is fined two cows and two bulls. One of the bulls is given to the chief and the other is killed at the funeral. One of the cows goes to the woman's father, the other to her maternal uncle.

(c) If a woman be murdered by some one else, the crime is punished as in the case of the murder of a man; most of the fine goes to the husband.

(d) If a woman kill her husband, she is beaten with sticks by her brother-in-law. The marriage price is returned to the husband's relatives; a small portion of it is given to the chief.

(e) If a man murder his own father, he pays a small fine of two or three head of cattle to the chief. The same holds good if a father murder his own child.

(f) If a woman kill her child she is beaten, and her husband is fined two or three head of cattle by the chief.

(g) The murder of a child is otherwise punished the same as the murder of a grown-up person.

Note.—Generally the murder of a relative is punished less heavily than that

of a stranger; the fine varying in proportion to the degree of ownership the murderer has in the victim. The reason being, of course, that the death of a relative is regarded more in the light of a private loss than from the point of view of the community.

C.—*Injuries to the body.*—(a) *For a spear wound.*—The man inflicting the hurt is fined two bullocks by the chief. The injured man gets nothing, unless it be a sheep to sacrifice at the Msambue. Should he die later of the wound, a further fine of four bulls and four cows is exacted, of which one bull and one cow go to the chief, and one bull to his headmen (Nanjira and Ligorri)—the remaining head go to the relatives.

(b) *Hurt with a knoberry.*—One goat, which is eaten by the injured party.

(c) *For loss of a hand.*—The injured person receives two cows, and a fine of one bull is exacted by the chief.

(d) *For loss of a leg or an eye.*—One cow, and a bull to the chief.

(e) *For loss of a finger or thumb.*—The injured party is given a sheep to sacrifice and eat.

(f) *Loss of a tooth or for tearing lobe of ear.*—The offender pays a bull, of which the hump goes to the chief. If the injured person belong to the Wakhitsetse clan, the chief gets the ribs instead of the hump.

(g) *For breaking an arm.*—Two cows, and one bull to the chief.

(h) *For breaking a leg.*—One cow, and one bull to the chief.

(i) *For causing loss of both eyes.*—Five cows and five bulls. Four head go to the chief, and six to the injured person.

(j) If a man leave his child unattended in the village and a fowl peck out its eyes, the chief fines the man a bull.

(k) If a man give a girl a disease called "Buba,"¹ her father claims a bull from him. Should the girl pass this disease on to another man, her father has to pay him a bull.

(l) If a beast cause the death of anyone, it is speared and eaten.²

Note.—If a fine of several head of cattle is inflicted, the bull, as a general rule, goes to the chief. If the fine consist of a bull only, the hump or ribs, as the case may be, is claimed by the chief.

For injuries inflicted by a woman the fine is always rather less.

Injuries caused by an intoxicated person are dealt with on the above lines.

Persons of unsound mind are beaten; but if they commit murder, they are executed.

D.—*Sexual offences.*—(a) *For rape or adultery.*—Offender pays a bull to the husband or father. The bull is killed and eaten; the hump is given to the chief.

(b) *For rape on a virgin.*—One cow to the father of the girl.

¹ Buba is, I take it, yaws or framboesia.

² Presumably at the funeral.

(c) If a man put a girl in the family way, he pays one head of cattle to her father. Should he subsequently marry her, the marriage price is reduced accordingly.

If the child be a boy, its father may claim it, but he may in such case be required to pay another two head of cattle to the girl's father.

If the child be a girl, it becomes the property of the mother's husband.

Should the girl die in giving birth, the father of the child pays a bull to the chief, a cow to her father and another to her maternal uncle, and a fourth beast, which is slaughtered at the funeral.

E.—*Theft*.—(a) *Of cattle*.—The thief is fined from one to five head, according to his wealth and the amount stolen. A rich man is punished more severely than a poor man.

Should he be unable to pay the fine, he is put in the stocks for one month, or given one or two months' hard labour in the chief's plantation.

Should he escape, he is punished.

Half the fine goes to the chief and half to the owner of the stolen property.

(b) *Of sheep*.—If the thief be a rich man, he is fined two sheep for every sheep stolen. Half the fine goes to the chief and half to the owner; a poor man is punished with imprisonment with hard labour.

(c) *Of fowls*.—The thief is fined two fowls for every one stolen.

(d) *Of food from a village or plantation*.—If committed in times of scarcity, the thief is fined one head of cattle; otherwise one sheep. The quantity stolen is measured off in the field with a rope and collected from the thief's plantations accordingly.

F.—*Accidental Injuries*.—The person concerned is fined by the chief for his carelessness and pays compensation to the injured party.

The following is a typical instance of the way accidental injuries are dealt with.

One of Mumia's wives went to her grain hut; she had her small child with her at the time and placed it on the ground beside the hut. Her brother, who was assisting her, lifted the roof off the hut and without noticing it deposited it on the spot where the child was lying. The child was presently found to be missing, and when search was made for it, was discovered dead under the roof of the grain hut.

Mumia thereupon paid five head of cattle to his clan and slaughtered a bullock. The woman was divorced, and the marriage price demanded back.

G.—*Arson*.—*For burning a hut*: the person concerned pays to the owner the value of the hut and everything in it. If wilful intent be proved, he is also fined five hoes. Should cattle be damaged in the fire, he is fined in addition one cow and one bull. The bull is claimed by the chief.

H.—*Other Offences*.—(a) If anyone, including her own husband, *tear off or take hold of a woman's tail*, he is required to pay a sheep or goat, which is sacrificed

and eaten, otherwise the woman's children will fall sick, and she herself, if pregnant, will abort.

(b) If a man assault a woman by seizing her by the hand, he is required to produce a bullock, which is slaughtered and eaten by the woman's brother in the husband's village. The husband may not join them; the hump is sent to the chief.

(c) For violating a sacred grove: the offender is fined a bull by the chief.

Punishments for offences connected with witchcraft and compensation for accidental injuries connected with superstitions have been dealt with in Parts VIII and X respectively (pp. 43 and 46).

IV.—*Laws relating to Marriage.*

(a) If a woman leave her husband, the chief orders her to return to him. If she refuse, the marriage price has to be returned to him, less the value of what she brought him at their marriage.

(b) If a woman leave her husband, she may take with her any young children of the marriage; but when they are grown up, the father may claim them.

(c) The proportion of the marriage price to be returned varies according to the number of children the woman has borne her husband. A husband is not entitled to demand back any portion of the marriage price, should the children exceed three in number.

If at the time of separation the children are very young and subsequently die, half the marriage price can be demanded back.

When the marriage price is returned, the male children belong to the father, the female children to the mother.

(d) A man cannot demand back the marriage price in the event of the woman proving barren.

(e) If a man marry a girl and find she be not a virgin, he is entitled to demand the return of one bullock.

If she be found to be with child, he may divorce her.

(f) If a man ill-treat his wife, she may complain to the chief, who fines him a goat.

V.—*Laws relating to Property.*

(a) If a man clear land and then abandon it, he can dispose of it for a nominal sum, such as one fowl.

(b) Banana plantations can be bought and sold.

The price of an average plantation is one goat and a hoe, or a bullock, or ten rupees.

(c) Huts can also be sold. Formerly they were valued at two fowls but owing to the scarcity of timber in these days the price now amounts to four or five rupees.

VI.—*Inheritance.*

(a) A minor's property is given into the custody of his uncles, who are given a small share of the cattle. The boy spends half his time with his mother's brothers and half with his father's brothers.

(b) If a man have no brothers, his property is entrusted to the care of the chief, who selects suitable guardians for the children and on the day of their father's death is given a bullock.

(c) A father can leave his property amongst his sons as he chooses, giving a younger son a larger share than an elder son; but the whole of his property must go to his children.

(d) A very rich man's property is divided up amongst his sons by the chief, who in return receives a cow for his trouble.

(e) On the death of a man young and childless wives pass to his brothers. Should they refuse to go, the return of the marriage price can be demanded.

Wives with children can elect to live with them.

(f) If the girl have no full brothers, the price is divided amongst her half brothers. In a family, where there are, say, three brothers and three sisters, the eldest brother would take the purchase price of the eldest sister, the second brother that of the second sister, and so forth. This is very frequently done during the father's lifetime, in order that his sons may themselves purchase wives with the cattle thus obtained.

(g) Every wife receives from her husband a certain quantity of stock. The chief wife is given most, unless she prove incompetent. On the death of the husband this property is divided up amongst the woman's children. If one of the wives have a larger number of children than the others, their portion is increased from the common stock. Every woman has also her own banana plantation, which goes to her eldest son.

APPENDIX A.

(a) Loreko is the country lying between the Nzaea and Lusumu Rivers; towards the east it is bounded by a small stream flowing into the Nzaea; from Mumias to this stream is a distance of about $1\frac{1}{2}$ miles. Uwanga is the country across the Nzaea (right bank); its northern boundary is the Sioia River.

(b) Wanga belonged to a tribe called the Wakhesiru. Kaviakalla's descendants are said to be living in Maragoli; it would be interesting to trace this, the elder branch of the family.

(c) Muroko's descendants still continue to reign semi-independently over a section of the Wawanga known as the Ndangalessia; the present chief is Ligerri S/O Denjeshe (*vide* Appendix B). The head of this family enjoys all the privileges and prerogatives of a reigning chief in his own right, but acknowledges

Mumia as supreme chief; and Mumia on his side recognizes his claims (*vide* Wawanga laws: Nanjira and Ligorri share in fines inflicted by the king).

(d) There are very few chiefs in the Elgon district who have the right to wear a leopard-skin cloak. Majanja, a very great Kitosh chief, was not permitted to do so, although a smaller chief, nominally at any rate under him, called Maiero, was. The reason being, that the former was not a hereditary chief of a ruling family, whilst the latter was. Majanja was succeeded by his son Sudi; but Sudi is not permitted either to wear such a cloak. In Uganda a similar custom prevails (or did prevail), only juniors of Royal blood being allowed to wear a leopard or cut skin round the waist.

(e) Beads of this description are strung on the hair from an elephant's tail and worn round the neck.

(f) Owing to the custom so many Europeans have of offering "Wazee" and others chairs to sit on, when they come into their camps or houses, a custom largely due to the inability of Europeans to distinguish between big men and little men, all natives being equal in their eyes, this rule is now scarcely ever observed.

Generally the white man's influence has caused much of the old etiquette to disappear, and the chiefs are no longer regarded by the common people with anything like the awe and reverence of former days.

A parallel to this custom of not allowing common people to sit on stools or chairs is to be found in Speke's Journal of the discovery of the Nile, in which he describes the difficulties he experienced in obtaining Mtesa's permission to sit on a chair he brought with him; no one being permitted to sit in the king's presence on anything raised above the ground.

(g) I cannot sufficiently regret that I was unable to inquire more closely into the magical or priestly character of the Wawanga kingship.

That the king is a semi-divine personage there cannot, I think, be very much doubt; further, there cannot be the smallest doubt that he is, first and foremost, a priest or medicine-man and that he exercises authority not by virtue of the kingship, but by virtue of his priesthood; to what extent he is a medicine-man and what his functions as such are I cannot very well say. We have seen that the fertility of some of the crops, at any rate, appears to depend upon certain sacrifices but ceremonies performed by him, in which also the chief wife or his mother play an important part; on the other hand, he does not appear to exercise control over the weather, for he is, so far as my information goes, not a rainmaker.

I believe one of the king's chief functions in olden time was to make the war medicine, and on this account alone he would be a very important personage amongst tribes that were constantly at war with each other.¹

¹ All sorts and kinds of tribes resorted to Skiundu and Mumia in time past for war medicine; even the E'Uasn-Gishu Masai, I believe.

From the account I have given of him I think we are safe in assuming that the king is in some vague way a reincarnation of the late king, and through him he stands in very close communion with the whole band of tribal ancestral spirits and possibly even with the tribal deity himself. The custom of strangling the king before death throws a good deal of light on the question.

Another interesting point with regard to the Wawanga kings is the apparently dual nature of the kingship.

In considering the question we are apt to be led astray by the shadowy part this other king appears to play; but for all that it might, were the real truth to be known, be none the less real and important; at any rate we need not conclude that, because he is to us a mere figure somewhere in the background, he is of no account; on the contrary, although as king he may exercise but small authority, he may in his character of priest be all powerful; in other words one may possibly here have a division of labour; and whilst the one, with certain exceptions, confines himself to duties of a purely temporal nature, the other may be responsible for the spiritual welfare of the tribe.

(h) The Kavirondo customs relating to burials and marriages are so extremely complicated that it is most difficult to avoid confusion in the recording of them or to put them down on paper in proper chronological order. I think, however, that my account of them will be found substantially correct; points on which I am doubtful I have omitted.

It should be borne in mind that my description is intended to be a record, though not an absolutely concise one, of every little detail of ceremonial that takes place on such occasions; but it is more than probable that, as amongst ourselves, many of these may, and probably are, very frequently omitted.

(i) For some reason the Wakhitsetse have of late years come to look upon themselves as Mohamedans. A good deal of proselytizing is carried on by the Mohamedans in and about Mumias, and I think there can be no doubt that by laying stress upon the importance the Wakhitsetse attach to circumcision they have gradually succeeded in convincing Mumia and his brothers that they belong to the Mohamedan faith.

The fact must not be lost sight of that, in the vast majority of cases where an up-country native embraces Islam, his conversion begins and ends with the rite of circumcision.

The importance to Mohamedans proselytizing in these parts of being able to claim the ruling family as belonging to their faith cannot be over estimated.

(j) Unfortunately my list of sacred groves is not complete. I suggest it would be well worth the trouble to compile such a list; since the intrusion of askaris and others into these places might easily give rise to trouble with the people.

| Clan. | Totem. | Sub-Clan. | Origin or Descent. |
|--|-------------|---|--|
| Wakhitsetse; descended from Wanga. | Bushbuck... | 1. Wamuchechere 2. Watende ... 3. Wamidchi ... 4. Wambule ... 5. Waiundo ... 6. Wamukalalo ... 7. Wakitechi ... 8. Waakomachi ... 9. Waafukho ... | Nanyanya S/O Musui. Banya S/O Musui. — — Skiaggi S/O Musui. Mukalalo S/O Musui. Kitechi S/O Musui. Akomachi S/O Musui. Afukho S/O Nedia. |
| Wanamagwa ... | Bushbuck... | ... | Namagwa S/O Wanga. |
| Wamunyafu ... | Bushbuck... | ... | Munyafu S/O Wanga. |
| Wamurono ¹ ; descended from Murono S/O Wanga. | Bushbuck... | 1. Musanda ... 2. Wachevve ... 3. Waioma ... | Tavuiche S/O Murono. — — |
| Wambatsa ... | Bushbuck... | ... | Wambatsa, a chief of the Wamanga tribe; lived formerly at Lorele. |
| Wakholue; descended from Kwendakhusuma, belonged to Wanga's tribe. | Bushbuck... | 1. Wamurumba ... 2. Wamale ... 3. Wakhamare ... | Osakho S/O Kwendakhusuma. Waskikumba S/O Ndualé, who was of same family as Kwendakhusuma. Came from Maratch. |
| Wareka ... | Ivechi ... | 1. Watalita ... 2. Wasangalo ... | Came from Sangalo in Kitosh and are descended originally from the Tatchoni tribe. |
| Wamuima ² ... | Fish ... | ... | Are the ruling clan amongst the Wamanga, and are said to have come from Mwali. |
| Watove ... | Fish ... | 1. Lungassi ... 2. Wamasingira ... | Are said to have belonged originally to the Kabras tribe. ³ |
| Wamuika ... | Bushbuck... | ... | Descended from the Wamakoya clan of the Wanyifa tribe. ⁴ |
| Wachero ... | Dove ... | ... | Descended from Muchero, a slave of Wanga; belonged originally to a tribe called Wakisa. ⁵ |

¹ This section is sometimes known as the Ndangalessia; the name is a purely geographical one, and is derived from the name of the place where Murono built his village, and signifies a waterless place. Musanda is the family name of the Wamurono chiefs.

² In my list of Wawanga clans I am including the Wamanga clans, since for all practical purposes the two tribes are by now one.

³ Wanga is said to have found these people in a swamp or island in the Nzaea called Chekhonessi; he saw their fires and invited them to join him; at that time the family is said to have comprised four male members only.

⁴ They migrated from their homes to an island in the Nzaea called Michinga, where they were discovered by Wanga.

⁵ The Wakisa lived near a hill called Kisa, on the Yala.

| Clan. | Totem. | Sub-Clan. | Origin or Descent. |
|---|------------------------------|-------------------------------------|---|
| Wakhalivu ; descended from Mwandume. ¹ | Roasted mwimbi. | 1. Wamatora ... 2. Watavucho ... | Mkhonso S/O Khalivu. ² Tavuche S/O Khalivu. |
| Wawesia... .. | A new pot ³ | ... .. | Wamakoya clan of the Wanyifa tribe. ⁴ |
| Wakhami | A milk pot ⁵ | ... .. | Umani in Gem ; came in after Wanga. |
| Washikava | Waterbuck | ... .. | Came with Wanga ; were his serfs. |
| Wanashieni ⁶ | Khatietie ⁷ | 1. Waskiundo ... 2. Waluta ... | Original clan. Came from Kitosh. |
| Wamulembua ⁸ | Two water jars. ⁹ | ... .. | Came from Mwali. |

Note.—The Wamurono used formerly not to intermarry with the Wakhitsetse, the elder branch of the family ; but may do so now. The Wakhitsetse, Wambatsa, and Wamale may not intermarry ; but the Wamale, Wakholue, and Wamurono are said to be allowed to do so.

THE WALAGO.

The real name of the Walago is El Bawgek ; Walago is the name given them by the Wamoni.

The tribe appears, in part at least, to be of Nandi extraction ; they are probably a mixture of several different tribes. They are divided into three political groups ; each group under its own chief as under :—

- I. *The Venyandet*, under Kepsteddi.
- II. *The Neketet*, under Chebukuto.
- III. *The Kaviemit*, under Werakai.

¹ Mwandume came here with Wanga ; he belonged to the Mwassi tribe in Terriki ; they are now said to be living in Gem.

² They take their name from Khalivu's village Matora.

³ May not eat food cooked in a new pot.

⁴ Migrated in from somewhere near Usoga some time after Wanga's arrival.

⁵ May not drink out of a milk gourd.

⁶ Lived formerly in Uchifi, on the right bank of the Lusumu River, and were the hereditary enemies of the Wamanga.

⁷ A species of small bird.

⁸ This clan was the "Wakhalivu" clan of the Wamanga.

⁹ If a member of this clan meet a person coming from the river with two water jars, it is considered a sign of ill-luck ; and as an antidote he must return to the village and kill a goat or a fowl ; if the latter, the ceremony is very similar to that described in my notes under "remedies against sickness" (*vide* p. 44) ; the beak is worn round the neck for one or two days. A man performs this ceremony himself, but a woman must have it done for her. If a goat is killed instead of a fowl, dung is rubbed on the chest, and a strip of skin is tied round the two little fingers of the right hand.

They live at the foot of Mount Elgon on the right bank of the Malikisi River and call their country Bawgek.

The tribe is divided into the following clans:—

I.—*The Venyandet Section.*

1. *Vanjoose*.—Totem leopard; came from Kamwaega Hill in Uganda; may not kill leopards or wear a leopard skin. If a leopard attack their cattle, they must get the members of some other clan to kill it.

2. *Kabinjose*.—Totem leopard; same origin and totemistic customs as the Vanjoose, with whom they may not intermarry.

3. *Kamwegek*.—Totem wild cat; same origin and totemistic customs as 1 and 2.

4. *Emnagambi*.—Totem a species of small monkey; same origin and totemistic customs as 1, 2, and 3. If this monkey do damage to the crops, they may drive it away but not injure it. Kepsteddi, the chief of this section, is a Wangoma by birth.

II.—*The Neketet Section.*

1. *Kamugek*.—Totem the lion; came from Kamwaega Hill in Uganda.

2. *Kabugonek*.—Totem a species of rodent called Shemuyi; came from Luteka, a hill at the source of the Malaba River.

3. *Kapgoiyek*.—Totem the baboon; same origin as the Kabugonek.

III.—*The Kaviemit Section.*

1. *Kamnimek*.—Totem grey monkey; came from Kabukwess, a hill in Uganda.

2. *Kabanandavek*.—Totem a small animal called Kanaeriek, probably the hyrax; came from Soos in Uganda.

3. *Kamusakek*.—Totem an animal called Olenyet, probably the ural; came from Kamawa in Uganda.

It will be noted that all these clans have moved in from the Uganda Protectorate, and that the different places where they came from are all situated close together round the western foot of Mount Elgon. The migration took place within the last fifty years. I judge them to be mainly of the same origin as the Suk and kindred tribes with an infusion from the same stock as that of the Kitosh, Wamoni, and other similar peoples; possibly they have also a certain amount of Turkana blood in them. They formed probably the advance guard of the Suk invasion, and were pushed westwards by these latter, the greater portion of whom ultimately moved eastwards towards the Sogota and Lake Baringo.

The clans are exogamous; they may not hunt, kill, or wear the skin or any trophy of their totem animal. Circumcision is practised amongst both sexes. As a general rule they do not bury their dead, the only exception to this rule that

I know of is in the case of the father of twins; this custom, I believe, exists amongst the Elgoni also; the body is buried in the village near the hut, the village is then abandoned.

THE WANGOMA.

The real name of this tribe is Ngomamek. The country they live in is called Bongoma. They are a tribe very similar to the Walago, who are their near neighbours; like them they are mainly of Nandi extraction with an infusion of blood from other tribes; most probably they are largely intermarried with the Wamia. They speak the same dialect as the Walago.

They are divided into the following clans:—

1. *Kaumatep*.—Totem hyæna; may not hunt their totem animal. Should they, however, kill one, they will slaughter a sheep and leave it by the carcase, for the spirit of the dead beast to eat; came from a cave called Kapsoma in Kamution, a hill at the foot of Mount Elgon on the Uganda side.
2. *Merinda*.—Totem fish; are of Nandi extraction and said to be descended from the Kimugun clan; after leaving Nandi they settled first for a time near a hill called Nalonda in Kitosh.
3. *Kamum*.—Totem rhino; may not hunt totem animal, not carry trophies, such as a rhino horn knobkerry; same origin as the Merinda.
4. *Kapchiena*.—Totem baboon; came from Mbai in Uganda; are of same extraction as the Kakelelwa.
5. *Kapkeneyu*.—Totem baboon; came from Nalonda in Kitosh; may not intermarry with the Kapchiena.
6. *Kaptaka*.—Totem lion; may not hunt totem animal; same origin as Kapchiena.
7. *Kaptai*.—Totem giraffe; same origin as the Kaumatep. Their cave was called Kamution, which is also the name of the hill.

Kaptai is the medicine-man's clan; Kepsteddi, chief of the Venyandet Walago, is the principal medicine-man of the clan; when I last visited the Wangoma, their own medicine-man was dead, and they were about to choose another one called Sumburre. Kepsteddi's father was formerly Laibon of the clan. The present chief of the Wangoma is a man called Matete.

Circumcision is practised amongst both sexes. As a general rule corpses are thrown out to the hyænas; chiefs and the father and mother of twins are, however, buried. Both male and female are buried lying on their right side. Males in the hut, females under the verandah.

THE WAMIA.

The Wamia call themselves Etossio; they are a branch of the Turkana and migrated originally from the Turko River to Karungu in Uganda, thence to

Torrero and finally settled on the borders of the Elgon district. The tribe is divided into four groups, as under :—

1. The Etanya ; chief Mucharo ; country Angveta.
2. The Ikarubuko ; chief Moin ; country Kollain.
3. The Kawgawei ; chief Iraru ; country Mwalia.
4. The Ikarubuko ; chief Itewa ; country Kabell.

The last two are, nominally at any rate, under chief Moin.

There appear to be two other tribes not included in my list of groups, called Eshorom and Awsawgaini.

The following is a more or less complete list of their clans (Agetegirri) :—

- | | |
|----------------|----------------|
| 1. Elmaelat. | 14. Ikwata. |
| 2. Isama. | 15. Ikawda. |
| 3. Hlogirr. | 16. Ikarubuko. |
| 4. Ikomolu. | 17. Igara. |
| 5. Ibarsama. | 18. Itengorr. |
| 6. Ikaiyoro. | 19. Irieta. |
| 7. Igoria. | 20. Ikattakak. |
| 8. Ikattigawk. | 21. Igurrok. |
| 9. Inarak. | 22. Kamariam. |
| 10. Igoruk. | 23. Ikarigoko. |
| 11. Ikatala. | 24. Ugawtok. |
| 12. Ikatanyu. | 25. Ekonoma. |
| 13. Ibalang. | |

The Wamia bury all their dead, both male and female, lying on the right side ; the grave is dug in the kraal. They are inveterate hashish smokers and, unlike the Turkana, indulge in fermented liquors. When they left the Turkell they were rich in camels and donkeys, but lost almost the whole of these in a raid by a people called Wakinussu, apparently a branch of the Masai. The clans are exogamous ; they appear to possess two totem animals only, the leopard and the hyæna, and one or other of these animals is the totem of every one of these clans.

Like the Turkana they kill their cattle by spearing ; sheep are smothered.

For further information on the Turkana see my paper on the Turkana of Baringa district.

THE EL KONYI.

The El Konyi are one of the many branches of the Nandi-speaking race. They are closely allied to the Chepcharangain and Sangwir groups, and trace their descent from a Kamasia family called Kapsangurt. The original head of this family was called Sangurt, and from him are descended the El Konyi Laibons.

The real name of the El Konyi is Sabaiyot. The tribe is divided into the following clans (Ortinuek) :—

| | Clan. | | | Totem. | | Origin. |
|------|---------------|-----|-----|-------------|-----|----------------------|
| I | Ol Kipsartok | ... | ... | Elephant | ... | Mavina. ¹ |
| II | Kamatembai | ... | ... | Buffalo | ... | Ditto. |
| III | Il Kiborite | ... | ... | Ditto | ... | Ditto. |
| IV | Chebogus | ... | ... | Ditto | ... | ? |
| V | Kapsott | ... | ... | ? | ... | Sangwir. |
| VI | Mogogir | ... | ... | Rat | ... | Ditto. |
| VII | Kapsauweleria | ... | ... | Bushbuck | ... | Ditto. |
| VIII | Sawmek | ... | ... | Baboon | ... | ? |
| IX | Chemnogosia | ... | ... | Hartebeeste | ... | Ditto. |

Clans Nos. II and III are branches of one and the same family; No. II being the elder branch; to it belong the Laibons. No. VII is now extinct.

The following clans may intermarry, I and II, I and III, I and IV, I and VII, V and VI, IV and VII, II and III, II and IV, II and VII, III and IV, III and VII, II and VI.

The El Konyi used at one time to intermarry with the Sangwir; but never with the Chepcharangain, the reason being, that the women of this tribe refuse to assist in the work of building huts, etc.; amongst the Chepcharangain this work being left to the men.

People may not hunt or eat the flesh of their totem animal, nor wear the skin or other trophies. The Kamatembai may not eat any game meat. Children take the totem of the father, both boys and girls are circumcized. They do not bury their dead. Certain of the clans, those possessing cattle, do not eat fowls, eggs, rats or fish. They say that when their cattle died during the great cattle plague they took to eating these things and died in consequence, hence they eschew them now.

The El Konyi used never formerly to cultivate, but are beginning to do so now Hashish has unfortunately taken a strong hold on them, and they grow this weed in enormous quantities. They possess three Laibons, Eramugge, the most important, Eraptaek, and Erachonge; the latter lives in Walago.

Like their neighbours the Wasauwin, who live on the other side of Elgon in the Uganda Protectorate, the El Konyi live in caves on the side of the mountain. The most important of these are Terrem, Chebbitch, Chevin, Chelelmit, Kipchori,

¹ Mavina is the name given to some caves on the other side of Elgon occupied by the Wasauwin.

Chepkaka, Kosirei, and Chebubutoi, of these Terrem is the largest; it takes its name from the beautiful waterfall close by. The name Terrem is now no longer confined to this one cave, but is used to denote the whole side of the mountain occupied by the El Konyi. Thus when an El Konyi is asked whence he comes from he will reply "from Terrem." Another, but less familiar, name is, I believe, Kebenawnik; but on this point I cannot be quite certain.

The El Konyi have many strange stories and beliefs in connection with their caves. Of Terrem, it is said that a gigantic white cow lives at the back, and that on rare occasions she leaves the cave to graze outside. Her visit to the outer world is heralded by strange rumbling noises, and in the morning the water of the small lake in the cave will be found to have risen above the level of the floor. Putting two and two together I imagine that these caves are ancient steam vents, and that on very rare occasions some inner disturbance in the mountain causes a rush of steam, the white cow of the legend.

I may add that I examined these carefully and could find no evidence for the theory that they are artificial; I am, however, not an expert.

Kabras is the name given to that portion of the Elgon district lying at the foot of the Nandi escarpment between Utsotso on the south and Kitosh on the north; and is a name of foreign origin.

The country may be divided into three sections:—

1. Unyala, lying at the foot of the Nandi escarpment.
2. Wakhusia towards Ambani's portion of Utsotso.
3. Tatsoni on the borders of Kitosh.

Nos. 1 and 2, with the exception of headman Sikolia's sub-district, are inhabited by the Kamalamba, the true Kabras. No. 3 and Sikolia's sub-district by the Tatsoni section of the Kitosh.

The reason why these latter have come to be classed with the Kabras instead of with the Kitosh is probably because they occupy the country on the left bank of the Nzoia River, which has always been considered as the boundary between Kitosh and Kabras. There can, however, I think, be no doubt that they are identical with Kifumo's Kitosh across the Nzoia River; and the name Tatsoni includes the country on both banks of this river.

I append a table showing details of Shitanda's and Lambassi's districts. I cannot supply information regarding the other chiefs' districts as I have not visited them yet.

CUSTOMS, ETC.¹

Totemism.

The tribes are divided into clans; the clans are exogamous; children are of the father's totem; a man may not marry into his mother's clan.

When the totem is an animal or vegetable, its consumption by members of the clan is, as a rule, forbidden.

¹ Unless expressly stated the following applies to the Kamalamba only.

If this prohibition be disregarded, they believe that they will break out in sores all over the body. Members of the Muhini clan (Watobo and Wachezi) may not allow a jembe handle (their totem) to touch their sleeping skins. Should this occur, the handle, after detaching the jembe, must be taken outside the hut and burnt (it may not be burnt inside the hut); and a goat, a black one for preference, must immediately be slaughtered.

Members of the Ibaka (python) totem (Walu and Wasamu), when they find a python, proceed to the spot with a pot of "uji" and a white fowl; and after presenting the snake with the "uji," pluck out a few feathers from the fowl, and sticking them upright in the ground before the snake, thus address it: "O snake! see we have brought you food, a pot of 'uji'; do not therefore become angry with us and shield us from all sickness and ill-luck."

After this they return to the village leaving the pot of "uji" behind, and let loose the fowl, which henceforth is a sacred bird, and if any member of the clan falls ill, they bring it to the sick person and calling out to the fowl the name of the patient ask it to cure him. This bird is specially efficacious in curing blindness.¹ The same custom exists amongst the Wawanga, but with them it is not confined to any particular clan.

Amongst the Omajina, whose totem is the malt utilized in making beer, it is a great offence for anyone to spit this stuff out on a member of the clan.

The following is a list of totems; this list is, however, probably not complete; but contains all those I was able to collect in the short time at my disposal:—

A.—*Kamalamba Tribe.*

| No. | Clan. | Totem. | Remarks. |
|-----|---------------|--------------------------|--|
| 1 | Watari ... | Chiroko ² ... | Said to be of E'uan-Gishu origin. |
| 2 | Washiu ... | White ant ... | Came from Marama. |
| 3 | Watobo ... | Jembe handle (Muhini)... | " " the Konyi. |
| 4 | Wachuuna ... | Dove (Situkha) ... | " " Marama. |
| 5 | Musonje ... | Murere ... | A native vegetable. Members of this clan perform the circumcision operation. |
| 6 | Washibika ... | ? | |
| 7 | Omudgi ... | ? | Of Wanyifa origin. |
| 8 | Wasogo ... | ? | Came from Emache in Kavirondo. |

¹ I cannot say for certain whether this fowl can cure all diseases or only blindness; I think, however, the version given above is correct.

² The prohibition against eating chiroko does not apply to all members.

| No. | Clan. | Totem. | Remarks. |
|-----|--------------|--------------------------|---|
| 9 | Wachezi ... | Jembe handle (Muhini)... | Came from Kakumega; may intermarry with the Watobo. |
| 10 | Wamusaga ... | ? | Nziwa; situkha. |
| 11 | Washegus ... | ? | Chircho. |
| 12 | Wakhusia ... | Guinea fowl ... | Came from Wawanga (Tomia's). |

B.—Lebonjess Tribe.

| | | | |
|---|---------------|----------------------------------|------------------------|
| 1 | Watobo ... | Jembe handle (Muhini)... | Came from Konyi. |
| 2 | Omajina ... | Obwanga (malt for brewing beer). | " " Kilelwa. |
| 3 | Wasoko... ... | ? | " " Utieri (Kilelwa). |
| 4 | Walu ... | Ibaka (python) ... | " " Terem (Mt. Elgon). |

C.—Sangalo Tribe.

| | | | |
|---|-------------|---------------------|-------------------------------|
| 1 | Muminam ... | Zebra (Sirgoit) ... | Came from Ukhaio. |
| 2 | Matoiwa ... | Kongoni ... | " " " |
| 3 | Wasamu ... | Python (ibaka) ... | " " Niwale, a hill in Kitosh. |

Births.

1. When a woman gives birth to twins, certain purification ceremonies must be performed before the mother may leave the hut, otherwise ill-luck will dog their footsteps through life. A day or two before it is proposed that they shall leave the hut for the first time, a sheep is killed, a black one if obtainable, if not, then a white one; the question of colour is, however, not of special importance. Next the husband proceeds to catch alive a small animal called Ifukho, which I take to be a mole, and which he deposits, together with a little food to keep it alive, in an earthen pot, where it remains for a day or so.

On the appointed day the mole is killed by driving a wooden spike into the back of its neck; the belly is split open and the contents of the stomach removed, and some of this is rubbed on the children's and mother's chest.

The skin is next cut up and a strip tied round the right wrist of each twin and round the mother's neck, and worn thus for five days, after which the mother proceeds to the river and, after washing, throws all three pieces of skin into the water. The flesh of the mole is deposited in a hole under the verandah of the hut,

before the door, and a pot, with a hole knocked in the bottom, is placed upside down over it; the hole is then filled in with earth. After this the mother may leave the hut.

Next a medicine-man is called in to make up a concoction composed of the remaining contents of the mole's stomach, the undigested food from the sheep's stomach (?) and of certain herbs. Some of this mixture he rubs on the hoes and then proceeds alone with the husband and wife to the plantations, where he sprinkles the remainder on the ground. After this the mother may leave her children alone in the hut, without fear of any harm coming to them.

The medicine-man receives a goat or a spear for his services; and if it be harvest time, when he performs the ceremony in the shambas, all those he passes on the road must make him a present of grain, and for this purpose the woman takes with her a basket.

2. If a cow gives birth to twins, fresh green grass is tied round the necks of all three beasts; a beer drinking feast is next prepared, and the calves are led out and tied up to one of the grain huts; a sheep is slaughtered and the company, after singing several songs, retires.

Deaths.

1. All dead are buried; the grave is dug in the kraal and is made very deep (about 4 feet 6 inches).

If the deceased was a man of much importance, the village moves to another site three or four months after the death; his grave is covered over with stones, and from time to time food and a lighted pipe of tobacco are placed upon the mound.

A man is buried lying on his right side, a woman lying on her left.

Nothing is deposited with the corpse in the grave (?); but before burial, whilst deceased is still lying in the hut, the relatives come and pour grain, tobacco and beer over the body. This is afterwards swept up and thrown outside, where it is picked up by the fowls.

After the grave is filled in, a fowl is killed by striking its head on the ground, and then consumed by fire.

If the dead man was sufficiently wealthy to allow his relatives to do so, a goat is eaten at the funeral and the following day a bullock is killed.

If a woman die in childbirth, a black sheep is killed, and the meat is given to the man or woman who assisted at the birth.

2. A chief of the Washiu clan is buried in a sitting position, wrapped in a raw bullock hide and with his head above ground. An earthen pot is placed over the head and the whole covered over with cow dung.

3. Dead persons' ornaments are given to their children after the funeral.

Marriages.

Formerly the price of a wife was about fourteen head of cattle. In these days, owing to scarcity of cattle, it has been reduced to from three to five cows, two

bullocks and four goats. This is given to the father of the girl and is usually passed on by him to his sons, to enable each to buy a wife, full brothers being given a larger share than half-brothers. The mother-in-law is given a present of two hoes and a knife, and the father further receives a spear. The bride on her part brings her husband a very large quantity of grain and beer.

Before the marriage takes place the father invites the son-in-law and his brothers to a beer drinking feast, after which the bridegroom takes his wife home with him, and a few days later, in his turn, gives a great feast, to which he invites the bride's relatives.

Divorce.

A wife cannot be returned to her parents, and the return of the marriage price demanded, unless she leave her husband and go to live with some one else: this is the case even though she prove barren. When the marriage price is returned, due deduction is made for the value of the grain and beer the wife brought her husband on their marriage.

Circumcision.

Amongst the Kamalamba boys only are circumcized. The Lebonjess and Sangalo circumcize both boys and girls. The ceremony takes place annually in the month Mukavukhanue, and if a boy wish to be circumcized, he must first obtain his father's consent; should he fail to do so, he is liable to the most serious consequences. A large hut for the accommodation of the boys is built in the village of the chief, and here they remain for the next three or four months after the operation.

As soon as they are circumcized, the front door of the hut is closed up, and henceforth exit by the back door only is permitted; the idea being that they must not be seen by strangers, or the healing up of the wound will be retarded. No married women or young boys are allowed near them during this time, but a number of unmarried girls live in the same hut with them to look after them and to cook their food.

No prohibition on the consumption of food exists except in regard to vegetables or meat requiring to be cooked with salt.

A boy may marry before being circumcized; and if after undergoing the operation he wishes to meet his wife, he may do so by secret assignation.

A member of the Musonje clan performs the operation.

Laws.

1. If a man put a girl in the family way, he pays the father of the girl a cow, if, however, he marry her, the purchase price is reduced accordingly.

2. The price for committing adultery is one bullock; the offender is tied up until he pays; if he have no bullock, he pays a cow, and failing that, grain and fowls; if he possess nothing at all, he is usually set free again.

3. *Rape*: fine, one cow.

4. *Murder*: Blood money, which was formerly thirty head of cattle, has now been reduced to twenty head. Unless the murderer pay compensation, he is liable to be killed by the relatives of the murdered man.

5. *Spear wound*: one head of cattle.

6. Causing loss of an *eye*: one cow and one bull.

7. Causing loss of a *finger*: one head of cattle.

8. Causing loss of a *hand*: one cow.

9. Causing loss of a *leg*: two cows.

10. Causing loss of an *ear*: one cow.

11. Breaking an *arm*: one bull.

12. Breaking a *leg*: one cow.

13. Striking a man with a knobkerry: one goat or sheep.

14. *Theft from a shamba*: from one fowl to a cow, according to the amount stolen.

15. *Theft of cattle*: from one cow or bull to ten head of cattle, according to the number stolen, and the return of the stolen property.

16. *Theft from a beehive*: one fowl¹ for every beehive robbed.

17. *Theft of a fowl*: one fowl for every one stolen.

Property.

1. The population to the square mile being small, there is ample land for all, and hence land tenure does not exist; a man may cultivate in one place one season and in another place two miles away next season; that is to say, the fact of a man clearing a patch of ground one season gives him no particular rights to that same patch next season.

2. Property at a man's death is divided between his brothers and sons. If he die possessed of much stock and he have only few brothers, these will as a rule be given five or six head of cattle each. If, however, there be a large number of both brothers and sons, the former will probably not receive more than one or two head at most; elder sons inherit a greater proportion of the father's wealth than younger sons.

Widows have the option of passing into the possession of their brothers-in-law or of remaining with their children.

The purchase price of a sister, if the father be dead, is divided amongst her brothers, full brothers receiving a larger share than half-brothers.

Calendar.

The following is the Kamalamba calendar; but I cannot guarantee its strict accuracy, as the time at my disposal was too short to allow me to check it very carefully.

¹ It is recognized that this punishment is inadequate; recently a man robbed four hives and was sentenced to pay six fowls, but he claimed that this was in excess of the amount he would be fined according to law.

Morotso Season, January-June.

| | | | | | | |
|---|-------|-----|-------------------------|-----|-----|--|
| 1 | Jan. | ... | Omusano | ... | ... | Sow wimbi; chiroko harvest. |
| 2 | Feb. | ... | Omunye | ... | ... | Weeding wimbi shambas. |
| 3 | Mar. | ... | Omuzaro | ... | ... | " " " |
| 4 | April | ... | Omsasaba | ... | } | Breaking ground for sim-sim cultivation. |
| 5 | May | ... | Omusafue | ... | | |
| 6 | June | ... | Omunane or Mukavukhanue | ... | ... | Wimbi harvest; circumcision month. |

Mulumbi Season, July-December.

| | | | | | | |
|----|-------|-----|------------|-----|-----|-------------------------------|
| 7 | July | ... | Muchesero | ... | } | Harvest time; grinding wimbi. |
| 8 | Aug. | ... | Mukhuiri | ... | | |
| 9 | Sept. | ... | Milimiro | ... | ... | Commence mtama cultivation. |
| 10 | Oct. | ... | Murachiro | ... | ... | Sow mtama. |
| 11 | Nov. | ... | Musirasire | ... | ... | Weeding mtama shambas. |
| 12 | Dec. | ... | Mukhalesie | .. | ... | Sow chiroko. |

The white mtama is cultivated in the Morotso season, the red mtama in the Mulumbi season.

Conclusions.

I conclude from the information I have given above, that the Kabras are of the same stock as the Wawanga, Waisukha, Watakho, Watsotso and other similar tribes, and that they are in no way akin to the Nandi-speaking people. Their calendar, totems and customs are akin to those of the Bantu Kavirondo and quite dissimilar from those of the Nandi.

There is, it is true, a certain superficial resemblance to the Nandi to be met with in individuals of the tribe, but this resemblance is not a physical resemblance, but mainly due to the adoption of the Nandi style of dressing the head and of Nandi ornaments.

There is, no doubt, a small infusion of Nilotic blood in the Kabras, but this is mainly derived from the EUasn-Gishu Masai and Konyi.

| Chief. | District. | Tribe. | Headman. | Sub-District. | Clan. |
|--------------|-------------|-------------|-----------------|----------------------------|-------------------------|
| Shitanda ... | Unyala ... | Kamalamba | 1. Shitanda ... | Kabatar ... | Watari. |
| | | | 2. Malanda ... | Ukamalamba (?) ... | Wasonje. |
| | | | 3. Sikolia ... | Umajina ... | Lebonjess. ¹ |
| Lambassi ... | Tatsoni ... | Sangalo ... | 1. Lambassi ... | Kipsai ⁴ ... | Sangalo. ² |
| | | | 2. Mukonohambi | Kulumbeni ⁵ ... | Mutamoyo. ³ |

THE FATAL TSETSE-FLY.

All over Baringo District small patches of fly-infected bush are to be found; for instance, one such patch exists about two miles south-east of the south-eastern corner of Lake Baringo.

The two danger zones, however, are the foothills of Loroghi and the bush on the Upper Kerio and Weiwei Rivers.

On two occasions I camped for a night at the foot of Loroghi; on both occasions I had with me dogs, camels, donkeys and a few sheep and goats, and on both occasions several of the donkeys subsequently died of fly bite, but none of the other animals. The natives tell me that camels will live almost indefinitely in this region and that cattle and sheep and goats can be kept there several weeks without danger, but that it is very fatal indeed for donkeys.

The Kerio and Weiwei River zone is less infected with fly than the Loroghi foothills, but this region also proves very fatal to donkeys. Until recently the Suk kept large numbers of donkeys on the Kerio, but within a single year almost every one of these died of fly bite, although scarcely a single head of cattle became infected. Since that time it has become impossible to keep donkeys on the Upper Kerio, but cattle, sheep and goats do very well indeed.

ELEPHANTS.

The country lying between the River Kerio and the foot of the Suk Hills is a vast expanse of dense and very thorny scrub; through the centre of this flows the River Krut, more familiarly known by its Swahili name, Weiwei, on its way to its junction with the Tirkwel at Ngabotok.

Apart from the elephant, very little game is to be met with in this scrub; here and there a few Thompsoni or a stray oryx are to be seen, and occasionally a

¹ This tribe is further divided into Walu and Omajina, and is of Kitosh origin and does not belong to the Kamalamba.

² They take their name from the hill Sangalo in Kitosh, from whence they migrated to their present location when Lambassi was a small boy.

³ The Mutamoyo are a subdivision of the Sangalo.

⁴ Kipsai lies towards the north-east corner of Kabras.

⁵ Kulumbeni in the open country towards Mumias.

solitary rhinoceros or buffalo may be heard crashing through the bush. It is probable, too, that Greater and Lesser Kudu, and even Bongo are to be found, and I have no doubt that were the traveller to proceed northwards across the Weiwei and down on to the Lower Kerio, into practically unknown and uninhabited country, he might come upon game in very considerable quantities.

The great glory, however, of this region is the magnificent great herd of elephant that throughout the year is to be found roaming over it.

I should be afraid to say how many elephant live in this bush; but I should think that a thousand head would not be a very exaggerated estimate.

I myself have on two occasions met with a great herd that covered three or four square miles of country. We viewed this herd from the top of a tree, and the whole country seemed to be enveloped in one vast cloud of dust. The following day we passed through the centre of the herd; and the great beasts, getting our wind, first formed up into groups and then presently stampeded. Battalion after battalion of cows and young bulls first moved off, and then file after file of old bulls, many of them carrying enormous great tusks, crashed past us into the bush. It would be no exaggeration, I think, to say that we saw fully three hundred elephant that day.

Contrary to our expectations, not a single beast made any attempt to charge, although all round us was alive with elephants, and they kept bearing down on us from all points of the compass. Finally at the very end of the herd, long after all the rest had fled, came one immense great tusker making his way in a slow, leisurely fashion, apparently utterly ignorant of the smallest danger threatening him.

The Suk Hills are a continuation of the Elgeyo Escarpment. The inhabitants are for the most part very poor, and the farther northwards one proceeds the poorer they become. The only cultivation known to them is that of millet and eleusine grain, and scarcely a season passes without bringing with it, at any rate a partial, failure of the crops. They are thus driven to seek their living in the forest, and many of them subsist throughout the year almost entirely on honey, roots, wild berries, rats, mice, and other lesser mammals, and last, but not least, on the flesh of elephants. Necessity has thus driven them to kill game, and they are without exception the most fearless and daring elephant hunters I have ever met with.

The tribe is split into sections, each occupying its own piece of hillside, and for purposes of hunting they have divided the country at the foot of the hill into preserves, each section having its tract of bush, in which it has the exclusive right of killing game.

Should a native of one section wound an elephant, and it die, or be despatched in the domain of another section, the ivory becomes the property of the man who first wounded it, the meat the property of the section in whose preserve it died. This is the tribal law regarding the slaying of elephants.

The sections that kill most game and are also the poorest, are the Kaptakau, Ngorrer, Maerich and Sekerr.

The Kaptakau hunt on the right bank of the Krut, the Ngorror in the country lying between the Krut and Maerich Rivers, the Maerich across these rivers to within three miles of a small stream forming the southern boundary of Sekerr.

The Kaptakau use mostly poisoned arrows, the other three sections the ordinary Suk throwing spear; whilst, however, the Maerich and Sekerr hunt on foot, the Ngorror build platforms in the trees, from which, lying in wait for the elephants, they stab them on their way down to water.

During the wet season, when pools of water are to be found here and there in the bush, the elephant split up into small herds. In the dry season they gather into one or two great herds and water at the Krut. Very old bulls, however, keep apart from the rest, and during the heat of the day they may be found lying up under the shade of the great trees that line the banks of this river, and being especially easy to kill, many of them fall victims to the native hunters.

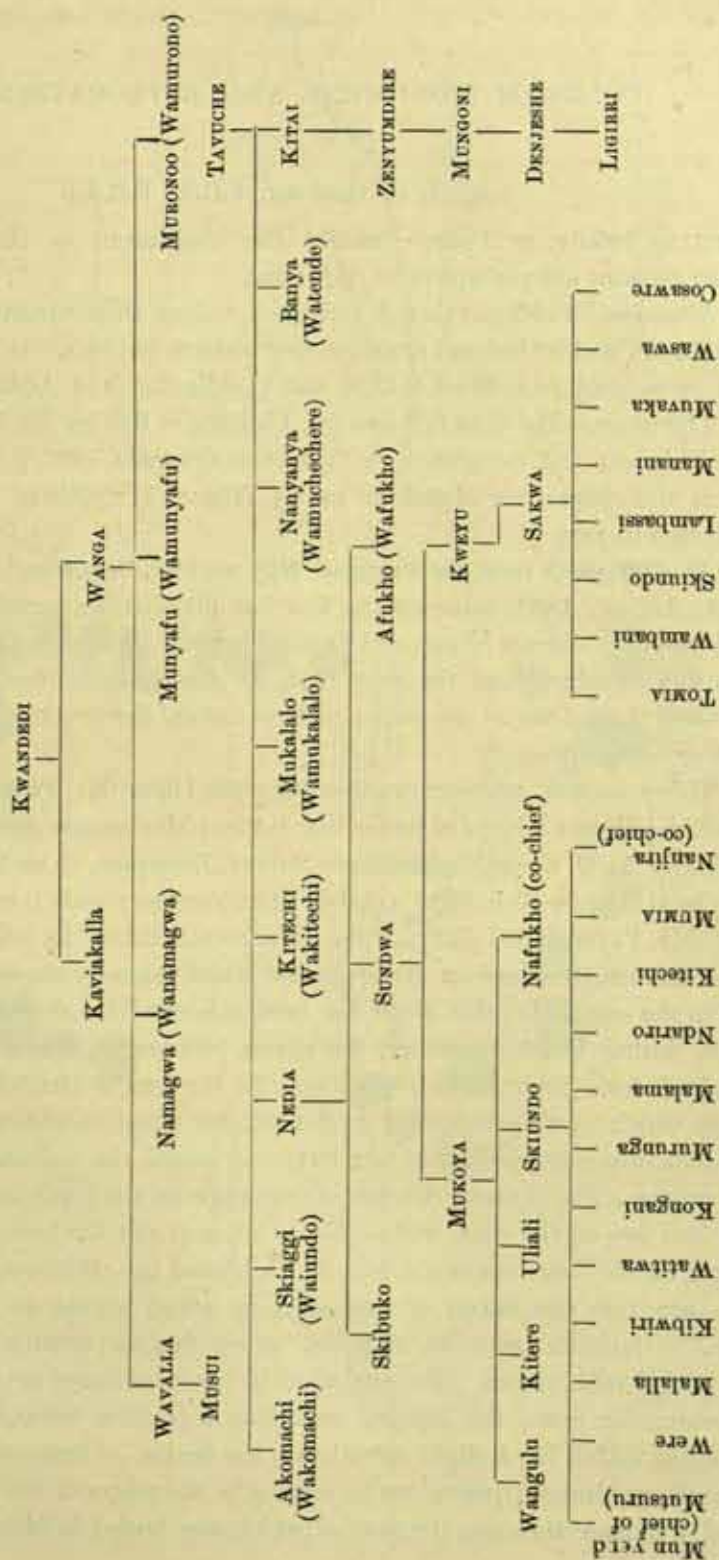
The elephants are not easily secured, but if they have been badly hunted, they make for Ngabotok, a hill at the junction of the Tirkwel and Weiwei Rivers; and on such occasions their departure is signalled to the inhabitants for many miles along the hillside by the great pillar of dust that follows their tempestuous rush through the bush.

At Ngabotok is a colony of Turkana Toropo, who, as soon as the herd makes its appearance, turn out and spear as many as they possibly can; they will follow after them for mile after mile, engaged in a kind of running fight with the great beasts, and I am told that upon such occasions they will often account for as many as ten or twelve head. The elephants do not stop here, therefore, but move on to Masol and Laterok, where they remain for a time watering at the Kerio, and then gradually work their way back to their old grazing grounds.

I have said that the Hill Suk are absolutely fearless hunters; they tell me that they can only remember one instance where one of them was killed by an elephant, and on that occasion the man met his death because he lost his head and attempted to run away from a charging cow. They maintain that no matter how fierce a charge an elephant may make, it is always possible to turn the beast by throwing spears at its head, and that so long as a man has courage to face the enraged animal, it will never charge home.

APPENDIX B.

WAKHITSETSE FAMILY TREE.



COLDRUM MONUMENT AND EXPLORATION 1910.

[WITH PLATE II.] —

BY F. J. BENNETT, F.G.S., F.R.A.I.

I WILL as briefly as I can describe the monument, as the exploration and human remains are perhaps more important.

Situation.—Coldrum, though perhaps a unique stone structure, is really very little known and its isolated situation may account for this. It is an hour's easy walk by footpath from West Malling and $1\frac{1}{4}$ miles north of Addington.

Literature.—The only full account, I believe, is that by Mr. G. Payne, F.S.A., in his well-known and valuable work *Collectanea Cantiana*, 1893, p. 139; I also refer to this in the chapter on Megaliths in my *History of Ightham*. I will give this, condensed in part.

At 700 paces from the Pilgrims' Way we (Mr. Payne and Mr. A. A. Arnold, F.S.A., August, 1889) came on the fine but little-known cromlech called by the local people "Coldrum Stones and Druid Temple." Attention was drawn to these extensive remains about the year 1845, in *Archæological Journal*, Vol. i, p. 263, but since that time no one seems to have taken the trouble to properly record them or make a plan.

This cromlech, so overgrown then but visited later, Mr. Payne wrote to General Pitt-Rivers to get scheduled under the Ancient Monuments Act. Mr. Payne then got Major A. O. Green, Instructor in Survey, Brompton, to make a proper survey, completed August 20th, 1892, a sketch (inset) was also made then by Major Green's son. Mr. Payne calls Coldrum "the finest monument of its class in the county." "The dolmen is erected on rising ground which formerly sloped towards the bye-way to the east of it; this slope has been excavated for the purpose of obtaining chalk, during which operations the stones, numbering fifteen on that side, were dislodged from their original position. To the west of the dolmen are seventeen stones, which now lie embedded in the soil, but which, doubtless, once stood erect. The structure comprises altogether forty-one stones, the majority weighing several tons apiece. The dolmen consists of one stone on the north and one on the south side and two on the west, whilst that on the east side has been dislodged. In the centre, on the floor, are two others, which formed the capstones, or it may be that they are the two halves of one capstone which served as a covering to the tomb." Coldrum may be regarded as a typical cromlech, *i.e.*, a dolmen surrounded with stones. The enclosure in question comes out upon the plan in a rectangular form, the dolmen occupying a position towards north-east of it; the space within has a slight elevation in the centre. "Some years ago two quasi-archæologists amused themselves by digging in the centre of the dolmen, when they found a human skeleton, the skull of which was buried in Meopham churchyard."

PLAN C.

PLAN OF MEGALITHIC COLDRUM: KENT:

NOTE

STONES WHICH EXIST IN A VERTICAL POSITION SHOWN WITH
— HORIZONTAL —

SCALE: 1/1600 INCH = ONE FOOT

SECTION THROUGH ADJACENT FIELD
SHOWING NEOLITHIC CULTIVATION TERRACES

SCALE: 1/1600 INCH = ONE FOOT

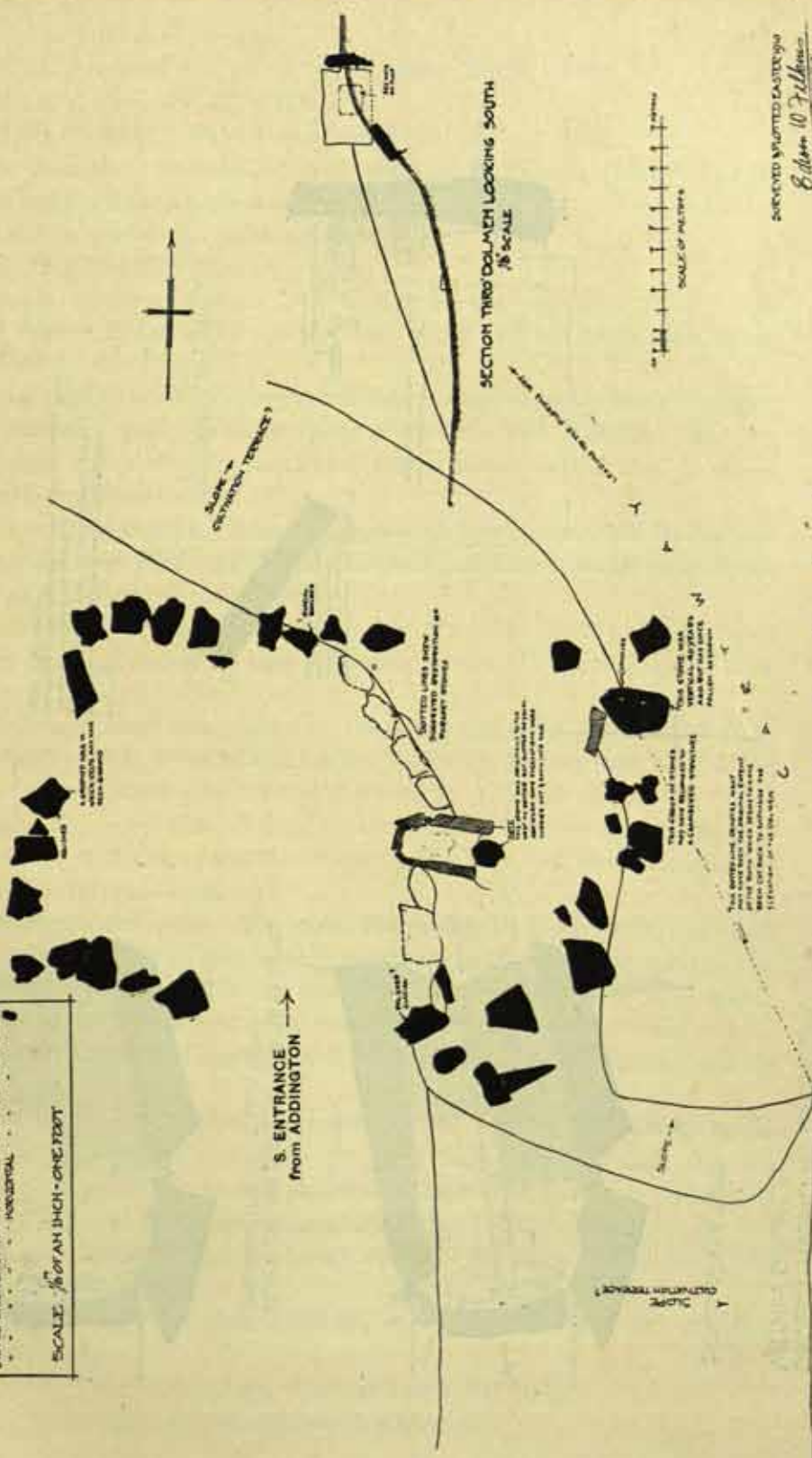
S. ENTRANCE
from ADDINGTON

SECTION THROUGH DOLMEN LOOKING SOUTH
1/8" SCALE

SCALE OF FEET

SCALE OF FEET

ORIENTED MAP OF EASTERN
KENT
CLIFFS OF THE
DOVER STRAIT



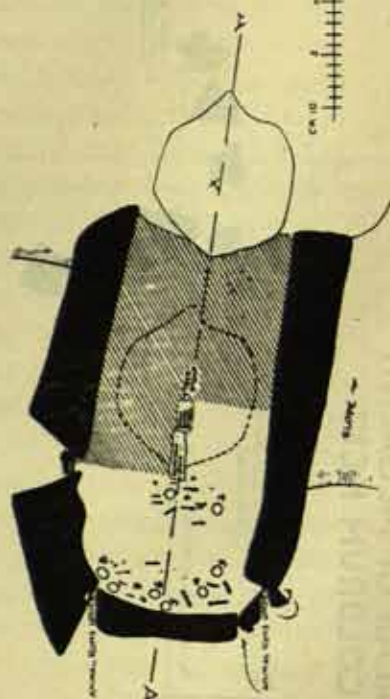
PLAN D.

PLAN SHOWING POSITIONS OF
SKULLS FOUND AT COLDRUM
WITHIN DOLMEN

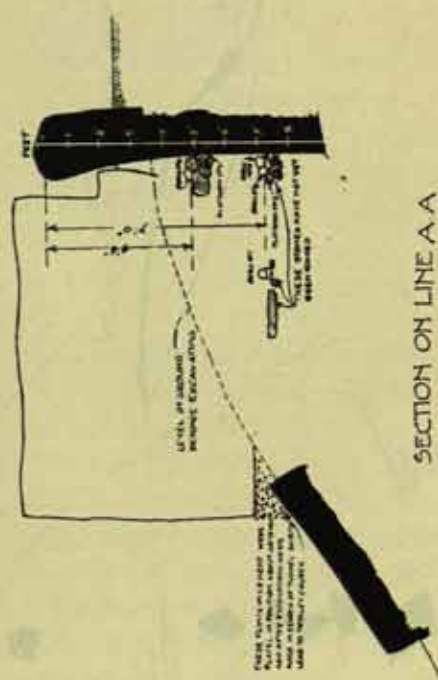
SCALE $\frac{1}{2}$ TO A FOOT



PLAN OF DOLMEN AT GROUND LEVEL
SHOWING FIRST DISCOVERY



PLAN OF DOLMEN AT LOWER LEVEL
SHOWING SECOND DISCOVERY



SECTION ON LINE A-A

NOTE
PORTION MATCHED ON PLAN IS UNEXPLORED
DOTTED LINES ON PLAN DENOTE APPROXIMATE
ORIGINAL POSITION OF STONE X
NUMERALS REFER TO ORDER IN WHICH SKULLS AS INDICATED
WERE DISCOVERED



NEW FIDELITY PRESS
NEW YORK
1910

Plans.—The published plans are :—

Archeologia Cantiana, Vol. xiii, p. 16. Professor Petrie. 1878.

Our Mr. A. L. Lewis's plan. 1878.

Collectanea Cantiana. Major Green, and sketch by Son. 1892.

Further plans, etc., and model on a larger scale. E. W. Filkins. (Plans C and D.)

Reasons for making these are given later on. 1910.

These will be used in the following description.

Name.—Origin of this I leave to others.

Description.—Coldrum consists of a dolmen on the edge of a 17-foot slope facing east with a broken square of 50 feet by 50 feet (all plans here agree) to west behind it. See Plan C.

The most marked break in this square is that to the south; this break, I suggest, may have formed a south entrance along a possible VIA SACRA (Map G), connecting with the Addington megaliths; several stones, as the Map G shows, remain of this suggested avenue.

To return to the dolmen. This now consists of four stones (Plan D) and once apparently of six (*vide* Payne, etc.), having had two medial ones; one of these slipped and is now at the entrance. See Plan D, x.

Internal dimensions are, east to west, 12 feet 3 inches; north to south, 5 feet 8 inches; on the slope and at the base are several stones (17); I will refer to these later on.

Dolmen stones—dimensions.—Those of the two on the north side are 8 feet by 1 foot 9 inches by 7 feet 5 inches, and 4 feet 6 inches by 2 feet; west side, 4 feet 6 inches by 1 foot; south side, 11 feet 3 inches by 1 foot 9 inches by 7 feet 3 inches; east side, slipped stone, 5 feet 2 inches by 4 feet 3 inches. As the bases of the west and one of the north and the slipped stones have not been disclosed we cannot give their full measurements.

The stones of broken square.—The stones composing the north, west, and south sides of the broken square lie horizontally, partly covered by growth, thus suggesting they were never vertical. The low mound in the centre is, as I have learnt, largely due to the carting of field refuse into the enclosure formed by these stones.

This completes my brief description of the monument; some additions will be made later on.

Sarsen Stone Survey, etc.—I will now refer to the position of Coldrum in the two divisions into which, as I consider, the West Kent megaliths fall; they are the result of the Sarsen Stone Survey, etc., which I have made during my residence in Malling, when I retired from the Geological Survey in 1889.

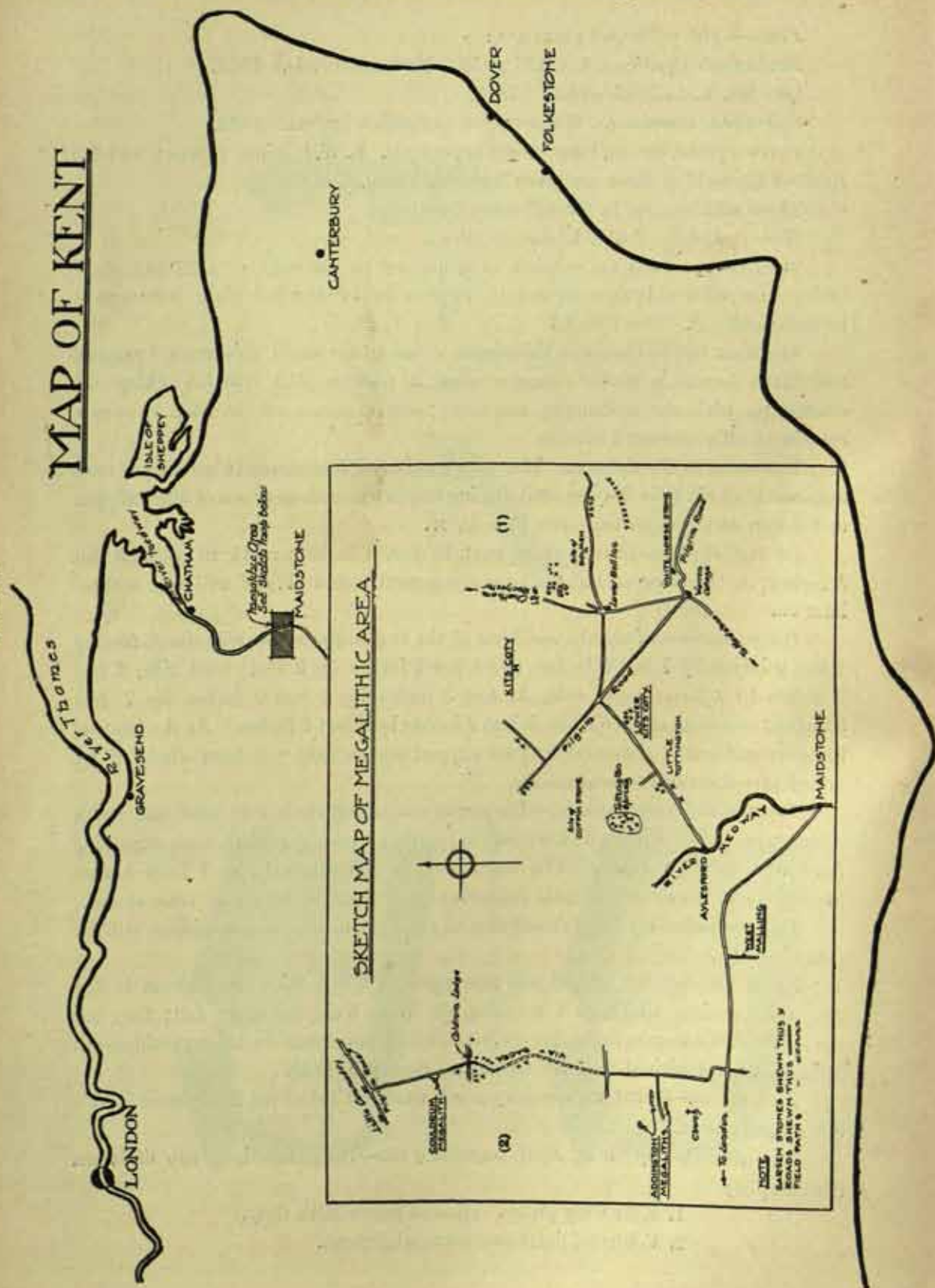
Field names.—What we also very much want is a list of the field names in this Sarsen stone area.

Two divisions of West Kent megaliths, etc.—These fall into two divisions. (See Map G)—

1. Kit's Coty group. (Round Lower Kit's Coty.)
2. Coldrum, north and south alignment.

MAP G.

MAP OF KENT



Exploration, 1910.—My finds of Neolithic flakes, etc., under the Addington megalith, led me to try what I might find within the Coldrum dolmen. My first attempt was made on April 16th, 1910, and no sooner had I put my fork in near the west wall than I at once turned up, and under only a few inches of chalky soil, some human bones. This find I kept to myself and determined to do no more without someone present to keep and record further finds, in an area apparently so full of human remains.

The opportunity arose on August 16th of same year, when I had a visit from my niece, Mrs. Lindsay, L.D.S., of Edinburgh, with her husband Mr. Lindsay, L.D.S., both, of course, dental experts, and also much interested in craniology. I then took them to Coldrum and we started to dig close to the south wall of the dolmen, and soon, under, say, 6 inches of soil and slabs of stone, we found Skull 1, Platform 1 (see Plan D), with teeth and bones; this was all we found that day. This skull was most carefully put together (it was found in many pieces) by Mr. Lindsay and returned to Dr. Keith.

I then informed Mr. Rust, Mr. Nevill's steward, of this most important find, and had his assurance that Mr. Nevill would not object to my proceeding further.

My thanks and also yours, I am sure, are due to his courtesy.

As Mr. and Mrs. Lindsay had to return to Edinburgh the next day, I wrote to Mr. Filkins, and on the 18th we met at Coldrum, and started work at the north-west corner of the dolmen, and he soon found bones and also the flint saw, the only implement of the kind found; and the only other finds were small portions of rude pottery (see these).

We carefully sifted the removed earth and soon finally came on a stone pavement, and on brushing away the soil found Skull 2, Platform 1 (see Plan D), lying between two blocks of (local) iron sandstone of the Folkestone Beds.

Two photographs were taken of this (see these) before the skull was disturbed.

On the 19th some further work was done and what seemed a trench was disclosed, 2 feet long along the north and south sides of the dolmen, and stopped at the east and west by pieces of stone, this may, however, have been a burrow.

The work was then stopped as I wished to have further expert opinion, and to inform such as to what had been found. By invitation Mr. G. Payne, of Rochester, and Mr. F. W. Reader met me and Mr. Filkins at Coldrum, August 20th, and Mr. Reader came back with me to Malling and inspected the remains at my house.

Nothing more was done. On September 2nd Dr. Keith visited me at Malling; saw the finds and considered them most important.

Nothing definite as to any immediate resumption of the work having come of the above meeting at Coldrum on August 20th—and on discussing the matter with my friend Mr. Boyd, of Malling, an experienced traveller who had met Dr. Keith, and who with his friend Miss Harker, of Malling, are both much interested in archæology, and fearing also, as the spot was so isolated, some unauthorized

persons might intervene, as indeed had already happened—it was thought best that I should, with their kind assistance, continue the work.

Assisted by them, work was resumed on the 3rd and 5th and completed on September 7th as far as our explored portion of the second platform, etc., was concerned.

To Miss Harker is due the finding in my presence of most of the remaining skulls; she most carefully and deftly worked round them, and the many pieces into which they fell were duly numbered with the accompanying bones, and removed to my house, and I afterwards restored the skulls as well as I could—no easy task, they were found in so many pieces.

Miss Harker and Mr. Boyd took photos of some of the skulls in position; circumstances prevented this being done with all of them.

Mr. Boyd also helped me to take measurements of their location and Mr. Filkins afterwards from these made the plans.

I here wish to thank all those who so kindly came to my assistance in this most important exploration.

General remarks.—As the plans show, the whole excavation took place in a very small area, 27 square feet on first platform, and less on second platform, and to the west of the once dividing stone, and there still remains much the same area to be explored, besides a possible third platform.

Most of the unexplored area is to the east of the once dividing stone, and when this slipped it may have pushed in front of it any burials to the east of it; some of these, however, may have been removed when the cave I have referred to was dug, and to these causes may perhaps be referred any human remains found on the slope at Coldrum previous to my exploration; we found some finger bones, etc., on the slope when Mr. Filkins and I had the earth cleared from the stones there on making the plans and model. A piece of a jaw was given me some three years ago, so found, and is now at Maidstone Museum.

Mr. Payne also alludes to a find of human remains in his *Collectanea Cantiana*, p. 139, made presumably when the cave was dug, and of which the skull, by order of the Vicar of Meopham, was buried in that churchyard, causing the Rector of Trosly to complain that he had robbed him of his oldest parishioner!

Age of Coldrum.—The flint saw and the portions of rude pottery may well be both Neolithic.

Another discovery of mine tending that way and of much interest, and unique as far as I know in England, is a highly polished groove in one of the stones (see Plan C).

Such grooves, as I afterwards learnt, are rather numerous in France and termed "polissoirs," and are always connected with the stones of the megaliths there.

The one in question seemed to me just such a groove in which Neolithic polished celts may have been ground, and close to this a polished flat surface where further or perhaps preliminary polishings took place. This surmise of mine is confirmed by the French evidence.

Calcareous deposit on the platform stones.—As stated we found two stone platforms and there still may be a third.

Now a most important age-factor is that the stones of both platforms are all coated with a deposit of carbonate of lime, and the red colour of these iron sand-stones is thus quite disguised. This deposit alone is eloquent of time, and as this occurs on all the stones examined of the first platform, there must have been a considerable interval of time between the interments of the two platforms corresponding to the time necessary to form that deposit, and if there should be a third platform under similar conditions, this adds still more to the age as thus indicated by deposit.

The fact that the area exposed to any rainfall west of the medial stone was, say, at most 20 square feet only, when that was in its place, and that much of this fall may have been deflected by the walls of the dolmen, points to a considerable period of time for the deposition of this deposit on the stones and which was dissolved out of the chalk soil that covered them. Of this chalk soil, too, we found only a foot or so on the first platform and not much more on the second platform.

No cover.—This deposit also proves that there could have been no cover on the dolmen during its deposition nor have I seen any stone on the slope, not accounted for, that could have formed such a cover, to say nothing of what might have made the placing of this on the dolmen, situated on so sharp a slope, an almost impossible task.

Arrangement (?) of the Remains.—The only evidence of any definite arrangement would seem to be indicated by the position of the skulls, and most of these would seem to have been placed on their faces, near to and almost touching the west wall of the dolmen, and also as regards No. 1 and No. 2 skulls of the second platform these may have been placed against the wall of the once dividing stone. In the middle space were found the bones, disposed at all angles, and all those on the second platform were in a very moist condition. They also proved most difficult to extract as the soil was very compact and even hard in places, and being so near to the colour of the soil this made it difficult both to distinguish and to extract them. The burrowing also of animals, rabbits, etc., had caused disturbances of the remains in those places.

Whose remains were these ?—In considering this question we at once take leave of fact for theory and speculation.

I also have come to the conclusion that the dolmen and parapet wall stood and stand on a prehistoric cultivation terrace, a key, but not perhaps the key to the purport of the Coldrum monument.

My suggestion, then, is that this cultivation terrace—they abounded in this area, and many still remain—connects Coldrum with agriculture, and thus I consider with its attendant customs, often religious ones.

Briefly, then, this monument may at one time have been dedicated, though not necessarily initially so, to the worship of the corn god and of agriculture. Dr. Fraser, as we know, has most abundantly shown in his monumental work, *The Worship*

of the *Golden Bough*, that this cult was a world-wide one, and not quite extinct even yet.

Some young man was selected, one of a family perhaps set apart, and had a very merry time during his year of god-ship, at the end of this, he was sacrificed at the dolmen, being led up the ascent, and his body was dismembered and the limbs and blood scattered over the fields to ensure fertility. His wife or wives may have been killed, too, and any child born during that year also, and their bones gathered together and buried within the dolmen.

As Dr. Keith will tell you, the remains of those on the upper platform mostly belong to young persons, two only being old ones, and one bone that of a newly born child, and all possibly belonged to one family.

As I have stated there must have been great intervals of time between the different platform interments, sufficient perhaps to have caused differences in the purport of the burials, and if there be any remains on the third platform these might add more to our knowledge, so that the story of Coldrum appears far from complete till further exploration takes place.

I may say I have replaced all the soil turned out, and have also filled up the excavated floor with Kentish rag, leaving it all indeed more compact, etc., than before.

Visit of Kent Archaeological Society, 1909.—A result of my Sarsen Stone Survey was the visit paid to White Horse Stone, Kit's Coty, and Coldrum in 1909 under my guidance.

Maidstone Megalith Meeting.—Another result of the survey, and of the above visit, was the important conference at Maidstone on the Kent megaliths, March 10th, 1910, opened by me. My views again differed very much from most of those then expressed.

How my plans, photos, and model came to be made.—I had been asked to prepare a large plan of Coldrum for the above meeting but the notice was too short and I wanted all that time to verify my Sarsen Stone Survey for the meeting. After that meeting I determined not only to make a large plan but also a model on the same scale.

These were most ably done under my superintendence by my architect friend, Mr. E. W. Filkins, of Gravesend; all the positions of the stones being fixed by theodolite, and modelled on the spot. This model, plans, photos, and 25-inch map I afterwards presented to the Maidstone Museum, where by application the latter may be seen, the former being always on view.

Opposing views as to Coldrum.—I have stated that my views as to Coldrum differed from those expressed at the meetings mentioned, I will now state them.

1. I hold that the dolmen does *not* stand in the centre of any circle, oval, or rectangle, and put in plans as proof, and the other published ones support this, 6-inch maps for instance; that on the contrary, rather, it formed part of a broken square with a parapet wall to the north and south of the dolmen, that this parapet formed the eastern boundary of the structure and that this never extended any further to the east.



FIG. 1.—STONES AT WEST OF DOLMEN.



FIG. 2.—VIEW OF DOLMEN FROM WEST.



FIG. 3.—REMAINS OF CHAMBERED STRUCTURE TO THE SOUTH OF THAT IN FIG. 4.

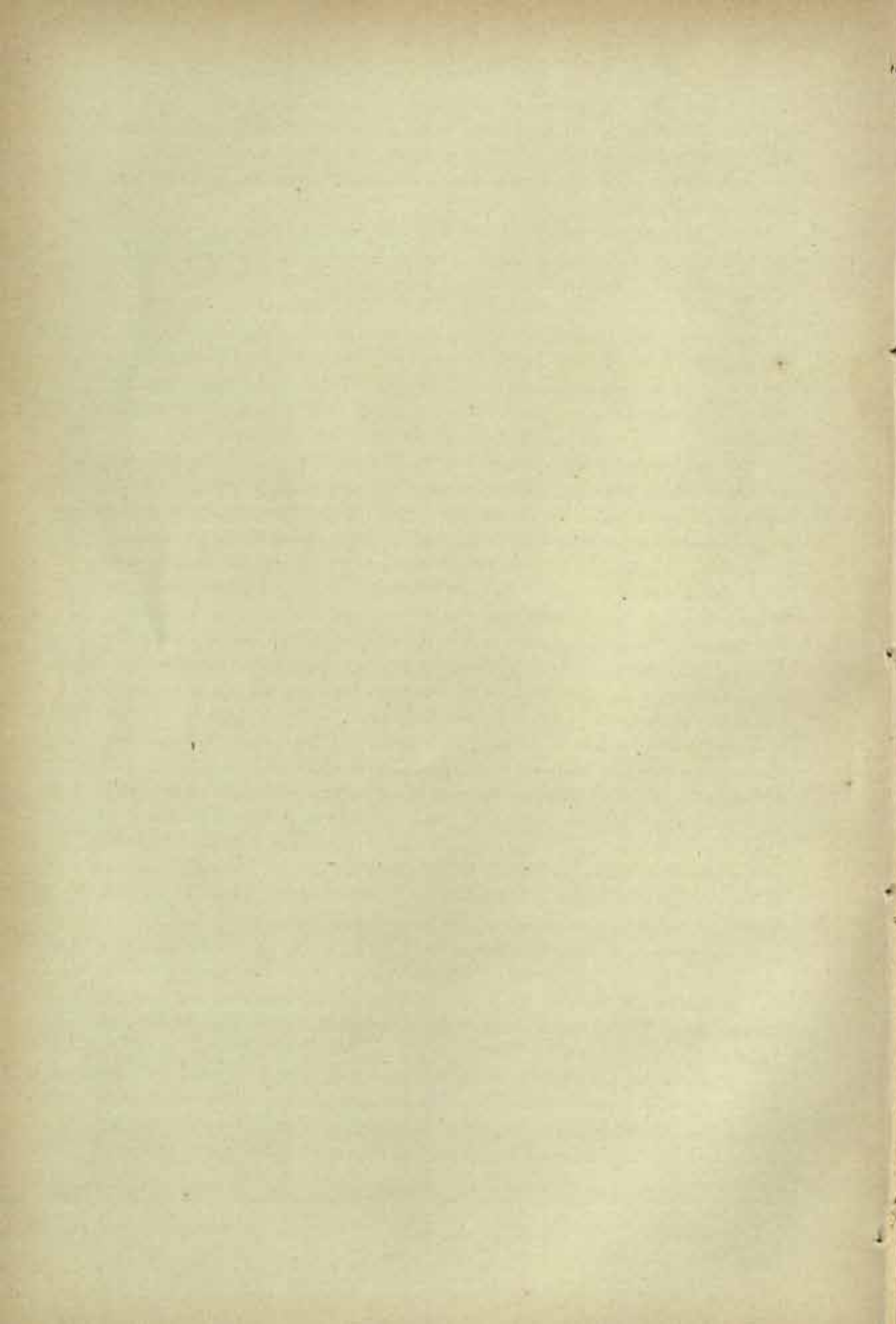


FIG. 4.—EAST VIEW OF DOLMEN.



FIG. 5.—VERTICAL STONE WITH OTHERS IN CONTACT, A SEPARATE CHAMBERED STRUCTURE.

COLDRETH MONUMENT AND EXPLORATION, 1910.



I would ask, if the dolmen had formed the centre of any circle, oval or rectangle, how came the so-called *fallen* stones to lie as they now do, *so far within* the supposed eastern half of any alleged circle, oval, or rectangle?

Some of these (see Plan C) parapet stones are still in place (see plan), the rest have merely *slipped*.

2. It is stated and published, and I quoted this, I admit, in my *History of Ightham*, in my chapter on the megaliths, not having gone into the matter so fully then, that fifteen of these stones fell through digging for chalk at Coldrum.

Now no such digging either did or would have taken place, as chalk could quite as well have been obtained either to the north or south of the monument; the risk also would have been too great, indeed, quite prohibitive, and the fall of one stone would have been quite enough. I have made most careful inquiry and not one stone has been known to have so fallen, though the medial stones, as we see, did slip some forty years ago say, but quite without being noticed or recorded.

My inquiries have led to my finding out how this idea of chalk digging arose.

About forty years ago, and when this property belonged to a Mr. Whitaker, and when the area within the dolmen was divided into two chambers by the medial stones, some unauthorized persons, simply to test the tradition of an underground passage, an evergreen idea, between the dolmen and Trosly church, half a mile south-west of Coldrum, dug a cave, which my informant saw, at the entrance to the dolmen (see Plan D), now indicated by flint concrete. This falling in of the cave, too, has been the cause of most serious disturbances within the dolmen. The Vicar of Trosly here intervened and stopped this, fearing the stones might fall.

This caused the slipping of the medial stones, but apparently quite unnoticed.

3. As to the seven stones to the north and at the foot of the slope, one of which is vertical, this, I consider, is in its original position and the one near it also perhaps. These seven stones, I hold, are not slipped parapet stones, but formed a separate chambered structure. There would seem to have been a similar one to the south, of which only two stones seem left. This also is a new reading of Coldrum. If then there were two separate chambered structures to the north and south at the foot of the slope with the dolmen above as apex, these would form a triangle seen from east as Mr. Filkins suggests. This further suggests to me the pyramid idea. On Plan C I have suggested a restoration of the parapet stones, and this still leaves these seven stones at least unaccounted for.

4. That what I have termed a cultivation terrace is such, and no earthwork, as has been stated, I believe. There is no ditch, and all the soil on the slope has accumulated. I could say more as to this and as to the origin of the terraces but have not the time now.

The standing, then, of the dolmen with the parapet wall on this terrace and with the stepped ascent to same gives to the structure a commanding and acropolis-like aspect, and a key to the purport of the monument, a unique one perhaps, and certainly a most interesting and important one; I now give place to Dr. Keith.

REPORT ON THE HUMAN REMAINS FOUND BY F. J. BENNETT,
ESQ., F.G.S., IN THE CENTRAL CHAMBER OF A MEGALITHIC
MONUMENT AT COLDRUM, KENT.

By A. KEITH, M.D., F.R.S., Conservator of Museum, Royal College of Surgeons of
England.

MR. BENNETT has described the monument and given an account of the position and depth at which the human remains described in this report were found. So far we know nothing of the physical characters of the people who built the Kentish Megalithic monuments. From the circumstances under which these remains were found it is reasonable to presume that they were built by the people whose remains are here described. Intrusive burials at a later date are of course possible, but seeing that no iron or metal implements of any kind were found with the remains and that worked flints and fragments of a crude pottery were the only evidences of a civilization discovered in the strata in which the remains lay, we may safely presume we are dealing with a race belonging to the Neolithic period and very probably the one which was concerned in the erection of these monuments.

All the bones are of a greyish chalky colour, due to the fact that the soil in which they were embedded was composed chiefly of chalk. How far these remains had been disturbed subsequently to the original burial has been dealt with by Mr. Bennett; it is possible, when one considers the very broken and fragmentary nature of the remains, the irregular position of the various parts of the skeletons, that there may have been a disturbance in some or all of the original burials. The condition of the bones—many of them have quite a metallic ring when struck—and the racial characters are in harmony with the view that we are dealing with a Neolithic people.

SUMMARY OF THE CHIEF FEATURES OF THE COLDRUM PEOPLE.

The remains represent men, women and children—varying in age from birth to senility. The collection of thigh bones represents at least twenty-two individuals. Only five of these are approximately complete. The crania show certain peculiar features which suggest that all these remains belong to one family—or to several families united by common descent. The head form indicates that the race to which the Coldrum people belonged was one near akin to, or identical with, the race which built the long barrows. They were a people of short stature (5 feet 4½ inches, males; 5 feet 1 inch, females),¹ with heads above the average size (cubic capacity—males, 1,600 c.c.; females, 1,450 c.c.), sound teeth, ground down in the mature and aged,

¹ Males, 1,645 mm.; females, 1,562 mm.

with flattened tibia, and foot bones which indicate short wide feet possessing free movements. They were a race with only a moderate muscular development.

List of Crania.

- No. 1. (Platform 2.) A fragment of the frontal bone. Probably of a young woman.
 No. 2. (Platform 1.) Man between 50 and 70 years. Peculiar elongated coffin-shaped skull. Palate.
 No. 3. (Platform 1.) Woman. Probably between 50 and 70 years.
 No. 4. (Platform 2.) Represented by temporal bones and fragments of the parietal. Probably male.
 No. 5. (Platform 2.) Woman. Aged. Frontal bone, face and base of skull are absent.
 No. 6. (Platform 2.) Young man, 18 and 20 years.
 No. 7. (Platform 2.) Young man, 30 and 40 years; occipital bone absent.
 No. 8. (Platform 2.) Woman 20 and 25 years. Skull with face and palate.
 No. 9. (Platform 1.) (Mr. Lindsay of Edinburgh.) Man 20 and 25 years.

TABLE 1.—*Coldrum Crania.*

| | No. 2. Platform 1. | No. 3. Platform 1. | No. 4. Platform 2 | No. 5. Platform 2 | No. 6. Platform 2 | No. 7. Platform 2 | No. 8. Platform 2 | No. 9. Platform 1. | No. 1 Platform 2 |
|-------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------|
| Sex. | M. | F. | M. | F. | M. | M. | F. | M. | F. |
| Age. | aged. | aged. | adult. | aged. | 18-20 | 30-40 | 20-25 | 20 | 20 † |
| Maximum length | 200 | 177 | | 178 † | 187 | 190 † | 190 | 186 | |
| Maximum width | 140 | 142 | | 140 | 142 | 140 | 141 | 138 | |
| Width to length | 70 | 80·2 | | 78·7 † | 75·9 | 73·7 | 74·2 | 74·2 | |
| Cerebral height | 105 | 106 | | 102 | 104 | 103 † | 104 | 98 | |
| Auricular height | 117 | 122 | | | 124 | | 124 | 113 | |
| Min. front. width | 98 | 98 | | | 94 | 98 | 96 | 100 | |
| Ext. orbit. width | 104 | 104 | | | 101 | 108 | 100 | 104 | |

Mean length of males 190·5 mm., of females 182 mm.

" width " " 140 " " " 141 "

" height " " 118 " " " 123 "

The crania.—Although nine crania are enumerated in the list, two of these, Nos. 1 and 4, are so fragmentary that little more than a statement of their sex can be given; two are very incomplete, No. 5 consisting of the parieto-occipital segment of the cranial vault; No. 7 of the fronto-parietal part of the vault. There are thus only five specimens sufficiently complete to afford definite evidence as to the cranial

form. Three of these are of male subjects and two of female. There can be no doubt that the race to which these crania belonged was one with elongated heads.

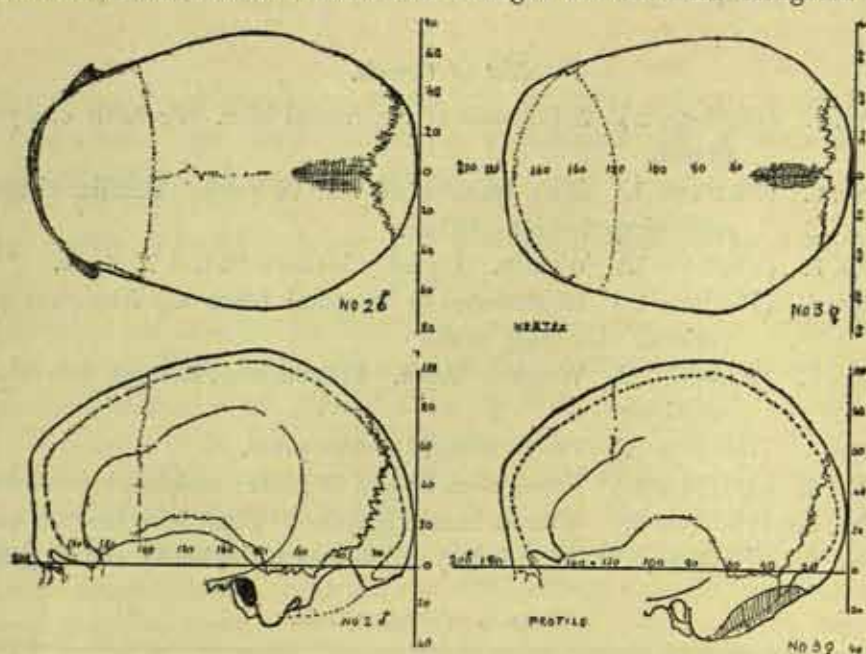


FIG. 1.

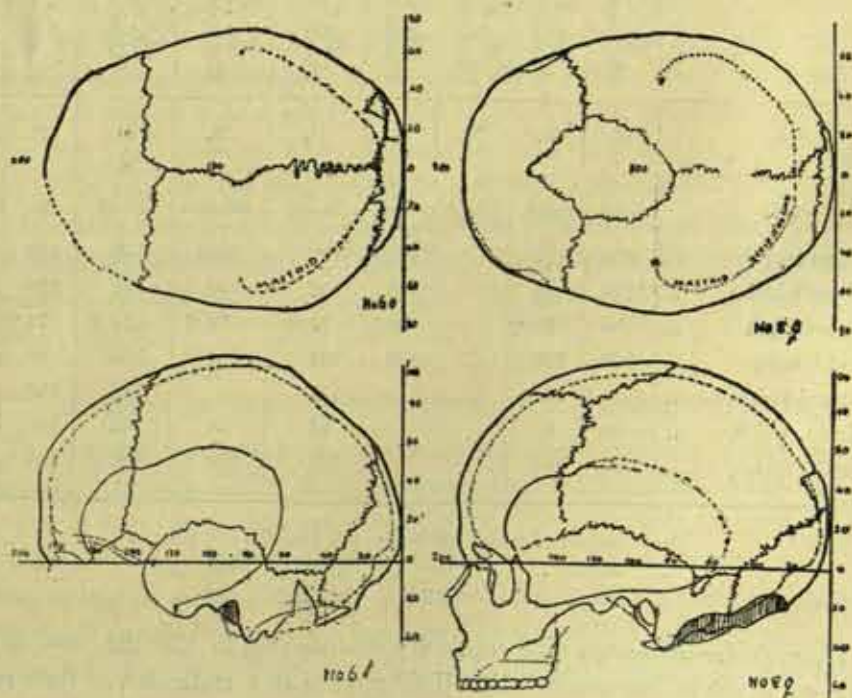


FIG. 2.

The cranial measurements are given in Table 1; in the crania of the three males the maximum width is 73.3 per cent. of the maximum length; in the two females

the relative width is 77.9 per cent. It is usual to find that the heads of women are relatively wider in long-headed races. We are thus dealing with a people in which the width of the head varied from 70 to 80 per cent. of its length. The heads were of medium height. When the crania are oriented on a plane which corresponds approximately to the base of the cerebrum—a plane indicated by the groove for the lateral sinus on the posterior inferior angle of the parietal bone and by the frontomalar junction—the highest point of the vault of the skull indicates what may be termed the cerebral height. In the Coldrum crania this height for the three males is 102.4 mm.; for the two females 105 mm. In the table the auricular heights are also given. The cranial capacity is of rather more than medium size. Using the formula given by Professor Pearson the mean cranial capacity for the three males is a little over 1,600 c.c., and for the two females, 1,450 c.c. In absolute and relative measurements the Coldrum crania do not differ materially from the skulls found in long barrows. For comparison with modern and ancient crania the reader is referred to Mr. Parson's paper on the Rothwell crania (*Journ. Roy. Anthropol. Inst.*, 1910, vol. xl, p. 483). The Coldrum crania differ from the crypt crania of Hythe, Upchurch, and Rothwell in having a greater absolute length and a smaller absolute breadth; in these same points they resemble the crania from the long barrows.

There are certain cranial features in the Coldrum bones which suggest that we are dealing with members of the same family. These features are: (1) the presence of Wormian or extra sutural bones; in No. 8 there is a large and uncommon bone at the junction of the coronal and sagittal sutures (see Fig. 2), and also a large inter-parietal bone with an irregularity in the posterior end of the sagittal suture; in No. 9 there are two inter-parietal Wormian bones; in No. 6 there is a vertical suture in the supra-occipital showing that an inter-parietal had been separated during development. Thus three of six crania possess large and uncommon Wormian bones. (2) The crania show irregularities of ossification. In all—even the oldest—the lamboid suture is open; on the other hand the sagittal and coronal show premature union. In No. 2 the skull has an elongated coffin-like shape; associated with this peculiarity of form is a closure of the sagittal and coronal sutures—evidently of long standing; in Nos. 3 and 5 there is evidence of a premature closure of the sagittal and coronal sutures. All the crania show the same forward prominence or bulging in the upper part of the forehead, due to the vault of the skull expanding more than the base during growth. The supra-orbital bars or ridges are almost absent or of no great prominence. In two of the male crania (Nos. 7 and 9) these parts reach a moderate degree of development; in the women the glabella and eye-brow regions are practically flush with the contour of the forehead, the nose, Grecian-like, springs straight from the frontal, without the intervention of a nasal recess or depression. We are dealing with a race in which the features of the face may be said to be refined. The skull bones are not thick; in the young they vary according to position from 3 to 6 mm., in the aged they vary from 3 to 8 mm.

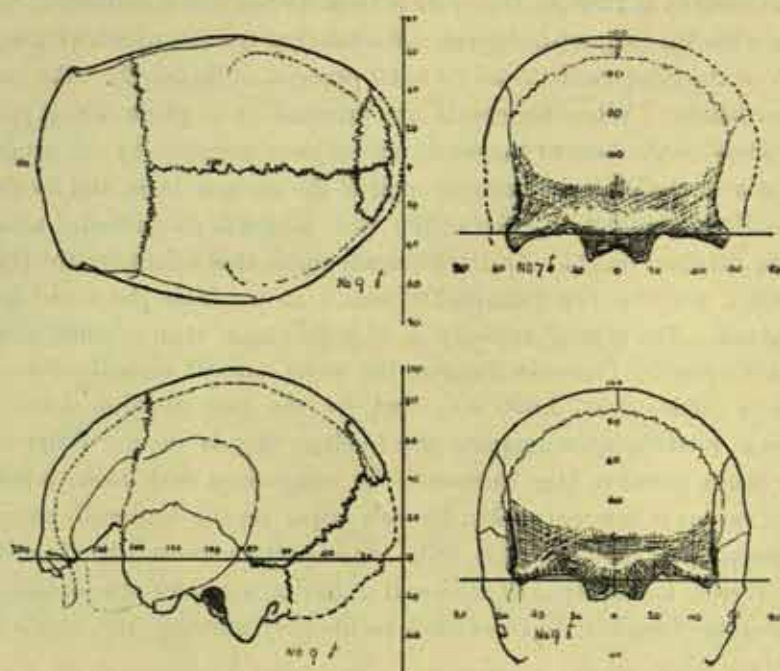


FIG. 3.

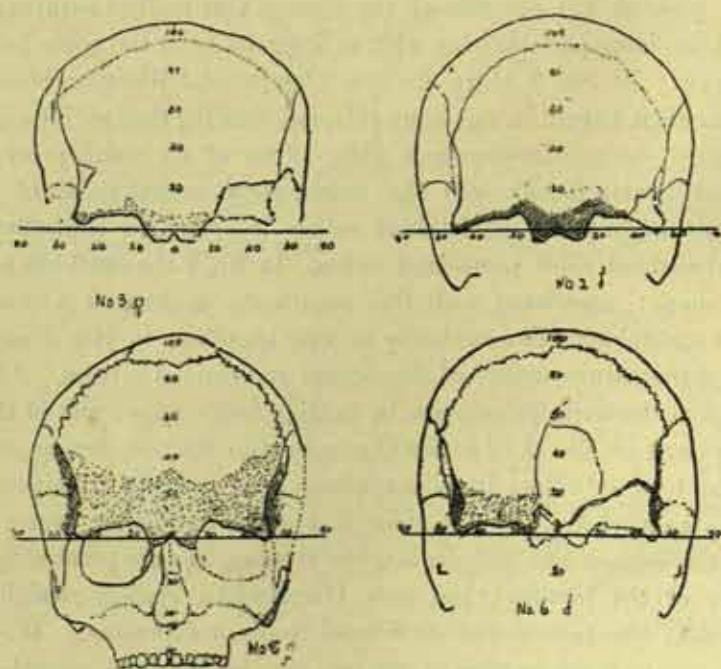


FIG. 4.

As regards the face and nose little can be said. In only one case (No. 8, female) are the facial parts preserved. In that case the naso-alveolar length of the face is 60 mm.; the bizygomatic width, 120 mm.; the face in this case is short and wide. A number of malar bones show that the facial bones were not massive and strong. There are fragments of five mandibles. In only one is the ascending ramus approximately complete; its height is 60 mm., a measurement which indicates a comparatively short face. In that case the breadth of the ramus was 34.8 mm. The sigmoid notch of the ascending ramus is of moderate depth. The mean height of the symphysis (four specimens, including male and females) is 32.5 mm. (2.5 mm. more than was found in six modern mandibles from the crypt at Upchurch, Kent). The thickness of the symphysis is 12 mm.—rather less than in the Upchurch mandibles. The chin is of medium prominence, and in the specimens preserved shows a square rather than a pointed form.

Masticatory system.—In the case of the older people the teeth are worn down so that the enamel has been worn away and the dentine exposed on the chewing area of the crowns. The wear of the incisor teeth shows that these teeth met edge to edge, thus differing from the modern "bite," where the lower incisors ascend behind the crowns of the upper. The teeth are of medium size, the incisors being somewhat larger, and the upper molars somewhat smaller than in the average dentition of modern English people. The following table gives the interdental width (proximo-distal diameter) of the various teeth (A), compared with the average dimensions of modern English students (B). It must be remembered that the number of teeth found at Coldrum are too few (in no series was the number of teeth found more than six) to give reliable results:—

| | A. | B. |
|--------------------------------------|------|------|
| | mm. | mm. |
| Length of palate ¹ | 53.2 | 54.3 |
| Width of palate ² | 61 | 60 |
| Upper teeth— | | |
| i ¹ | 8.9 | 8.4 |
| i ² | 6.5 | 6 |
| c | 7.3 | 7.2 |
| pm ¹ | 6.8 | 6.2 |
| pm ² | 6.4 | 6.4 |

¹ Measured from anterior alveolar point to mid-point between distal borders of third molar teeth.

² Between outer borders of second molar teeth.

| | A. | B. |
|------------------------|------|-------|
| Upper teeth— | | |
| m ¹ | 10 | 10·37 |
| m ² | 9 | 9·4 |
| m ³ | 7·4 | 8·6 |
| Lower teeth— | | |
| i ¹ | — | — |
| i ² | — | — |
| c | — | — |
| pm ¹ | 6·75 | 6·3 |
| pm ² | 7 | 6·4 |
| m ¹ | 10·5 | 10·1 |
| m ² | 10·5 | 10·1 |
| m ³ | 10 | 9·1 |

As regards dimensions of the palate it will be seen that the Coldrum form is slightly shorter and slightly wider than the modern palate. In no instance was there any evidence of crowding or of irregularity of the teeth; the palate is less vaulted than is common in modern individuals. In the Coldrum people contracted palate and dental irregularity had not yet appeared. The incisors are of slightly larger size, but the upper molars are rather smaller than in modern people. The upper wisdom teeth in these Coldrum remains are as much reduced as in modern dentitions. On the other hand, the lower molars of the Coldrum people are less reduced than in modern English dentitions. Not a single case of caries of the teeth was observed.

The teeth and jaws were thus of medium size and strength, and we therefore do not expect to find traces of a great development of those parts connected with the muscles of mastication. In four cases it was possible to form an approximate estimate of the width between the zygomatic arches—to which the masseter muscles are attached. These include both male and female skulls; the mean is 122 mm. In modern Englishmen this measurement amounts to 126 mm., in women to 118 mm. The greater the muscles of mastication the more does the width of the supra-orbital bars (ext. orbit. width, Table 1) exceed the width of the forehead between the temporal lines (minimum frontal width, Table 1). In only one skull is the difference between these measurements 10 mm.; in the others the difference varies from 4 to 7 mm.—a very moderate amount. The greater the muscles of mastication, the higher do the temporal lines ascend on the vault of the skull. In the Coldrum crania it was impossible to estimate the height of these

ridges above the zygomatic arches; one has to fall back on the distance of these ridges from the sagittal suture—a less reliable indication of masticatory development. In two male crania the temporo-sagittal distance (taken 20 mm. behind the coronal suture) was 67 mm.; in modern Englishmen this distance averages about 65 mm. One may safely infer that the temporal muscles of those people were not larger than the same muscles in modern people.

The neck and fixation of the skull.—It is possible by examining the impressions which the muscles of the neck make on the base of the skull to form an idea of the manner in which the head was carried and of the strength of the neck. The width of the neck is indicated by the bimaistoid diameter; its thickness or front to back diameter is indicated by a line drawn from the inion (external occipital protuberance) to a point which is midway between the anterior borders of the mastoid processes. In the Coldrum skulls the width for males is 123 mm. (modern males, 126; for females, 119 mm.); the back to front thickness in males is 78 mm. (modern males, 80 mm.; in females, 67 mm.). The neck of woman is more slender than that of man, and we see that the Coldrum people, both male and female, had rather slender necks. The head was not deeply implanted on a short thick neck.

Professor Elliot Smith has pointed out that in right-handed people the occipital pole of the left cerebral hemisphere is the larger and usually projects more backwards than the right. In left-handed people it is the opposite. In all the Coldrum crania the impression for the left pole is much more extensive than the right, and we may infer that they were all right-handed. In every case the occipital region of the skull projects backwards in a cap-like prominence. The open lambdoidal suture is associated with this occipital projection, which is a character of the race which built the long barrows and of that British type to which Huxley gave the name of "River-bed."

Femora.—Altogether there are representations of the femora of twenty-two individuals—in seven cases both the right and left bones are preserved. From the size of the head, muscular markings, and condition of ossification, I have come to the conclusion that of the twenty-two individuals thus represented eight were adult males, four were adult females, one adult (sex?); six between sixteen and twenty-five years of age, three between eight and sixteen years. Thus all sexes and ages are represented, but the number of males is in excess. As regards the total length of the bone—measured with the femur placed so that the condyles are on the same horizontal plane—only four were absolutely complete:—

| | | | |
|-----|-----|-----|-------------------------------------|
| "C" | ... | ... | right femur, 457 mm.; left, 452 mm. |
| "F" | ... | ... | " " 435 " |
| "M" | ... | ... | " " 428 " |
| "D" | ... | ... | " " 435 " |

In three other males the fragments were sufficient to give grounds for estimating the length "B" 465, "E" 440, "F" 435; two cases in which the sex is doubtful, 435 and 430 mm.; in one female "H" 425. Thus the mean for six males is 443 mm., and for two females 430 mm. Using Professor Pearson's

formula, the stature may be estimated for the male at 1,645 mm. (5 feet 4½ inches); for the female 1,562 mm. (5 feet 1 inch). They were people of less than medium stature, thus recalling, as regards stature, Neolithic races of Switzerland and France, rather than the people who built the long barrows of England. From the data given by Rahon, Pearson estimates that the stature of the dolmen builders of the Caucasus was 1,643 for males and 1,524 for females (Karl Pearson, "Reconstruction of the Stature of Prehistoric Races," *Phil. Trans.*, 1898, vol. 192, Series A, p. 169).

The diameters of the upper part of the shaft of the femora, taken opposite the middle of the gluteal impression, gave the following measurements in six specimens, 39×33 ; 34×20 ; 28×29 ; 34×29 ; 33×25 ; 31×24 . The proportion of the antero-posterior to the transverse diameter is 83·6 per cent. (varying from 69·4 to 103·6). As compared to Neolithic thigh bones those found at Coldrum have a comparatively great antero-posterior diameter—the usual proportion for European femora of the Neolithic period varying from 70 to 80 per cent. The width of the upper part of the shaft is due to a flange of bone which passes from the root of the neck of the femur to the inner part of the shaft in front of the small trochanter and serves as a supporting pillar between the shaft and the neck. The functional significance of the flange is obscure. In seventeen bones its development could be estimated; in two it was very pronounced; in five pronounced; in two of lesser size; while in seven it was merely indicated or absent. Its presence or absence is probably not due to a mixture of races or peoples, but simply to an individual variation within the same race. In one individual only could the right and left bones be compared; the flattening was greater on the left side (right, 34×26 ; left, 35×25).

In the middle of the shaft the antero-posterior diameter exceeded the transverse; the proportion of the one to the other was found to be 27:25·6 = 105·5 per cent. In eight the antero-posterior diameter was the greater, in three it was the less; in two the diameters were equal. The flattening of the shaft is rather greater than is common in modern bones and less than in Neolithic femora. The linea aspera in no case formed a prominent pillar or ridge. In the specimen where this muscular ridge was best marked its antero-posterior diameter or height of the ridge measured 5 mm.; in three, 4 mm.; in two, 2 mm.; and in two, 1 mm. A third or gluteal trochanter was well developed in only two specimens. In six specimens the transverse condylar width was measured; in two specimens this measurement was 76 mm.; in three, 77 mm.; in one, 78 mm. As regards the size and shape of the head of the femora, the following antero-posterior and proximo-distal diameters were noted: (1) males, $46·5 \times 45$ mm.; 48×46 mm.; $45 \times$ — mm.; $44 \times$ — mm.; $44·5 \times$ — mm.; in females, 42×43 mm.; $39 \times$ — mm. In size the heads of the femora resemble the corresponding parts of modern thigh bones.

Tibiae.—About twenty individuals are represented in the collection of tibiae but there is only one pair complete, although in four other cases sufficient of the bone is present to allow an estimate of the probable length to be made. About half of the specimens are from immature subjects.

The total length of the tibiae in the case where they are preserved entire is 368 mm. for the right and 365 mm. for the left. The pair just mentioned and another where the length is estimated to have been 360 mm. are from males; in two cases, where the characters are of the female type, the length has been calculated to have been 310 and 320 mm. Taking the average length of the male tibia to have been 362 mm. and the female 315 mm., and applying Pearson's formula for stature, the following results are obtained:—

male stature, 1,644 mm.; female, 1,487 mm.

The result as regards the male stature is the same as obtained from the femoral length; but as regards the female stature the result is considerably less. It must be remembered the female tibiae were fragmentary. The tibia of the male is about 80 per cent. of the femoral length.

The tibia are compressed from side to side or platynemic but not to an extreme degree. At the nutrient foramen measurements were taken of six bones, apparently males; the diameters were 22×37 ; 21×34 ; 27×37 ; 25×35 ; 22×37 ; 23×34 , giving a mean transverse diameter of 23.3 mm. and an antero-posterior of 35.6 mm. The transverse diameter is 65.4 per cent. of the antero-posterior—a common proportion in Neolithic races. In two female bones the diameters were 18×28 ; 22×30 , giving a mean of 22×29 with an index of 76. The tibia of women and of young people is less flattened than that of the male. The torsion of the transverse axis of the upper articulation to the lower varied from 25° to 50° . In one bone the joint surfaces showed rheumatic thickening.

There were seven knee-caps and fragments of twenty-six fibulae, the latter bones showing deep flutings and projecting ridges.

The foot.—It is evident that the mechanism of the foot differed very materially to that which now obtains amongst Englishmen. The cause of the change is obscure; it may be due to a different fashion of footwear, or it may be that the characters to be described are really of the nature of racial peculiarities or they may be due to the change which modern civilization has effected in our roadways and methods of locomotion. For my part, I believe the change is due—not to an extinction of race—but to a change in habit.

Of the bones of the foot there are ten astragali or ankle bones preserved; seven of men, three of women, but only six of the former and one of the latter are complete enough for exact measurement. The bones are shorter and wider than those of modern English feet. The total length of the astragalus is 51.4 mm. on the average and the width 41.7 mm.—being considerably shorter and wider than modern bones. Mr. Sewell (*Jour. Anat. and Physiol.*, 1904, pp. 233, 424), in a series of nearly 1,000 bones, mostly of Ancient Egyptians, found the corresponding measurements to be 50 mm. long and 39 mm. wide, but in modern English the astragalus is markedly longer and narrower. The contrast between the Coldrum and modern bones is best brought out by the profile and horizontal tracings of the astragalus and os calcis given in Fig. 5. In both cases the bones are oriented in a similar manner and the differences between the ancient and modern forms are at

once made evident. In the first place it is seen that the upper articular surface of the typical Coldrum astragalus is shorter and more convex; the ankle-joint works on a pulley-like surface with a short radius; in Jonathan Wilde's foot—a short man—not taller than the Coldrum individual used for comparison—the movement at the ankle-joint is one more of gliding as well as of rotation; in the Coldrum man the movement is one of rotation more than of gliding. The chief difference refers, however, to the anterior articular surface of the astragalus; in Jonathan Wilde this surface looks chiefly forwards and downwards; in the Coldrum specimen it is extended inwards and to some degree upwards to such an

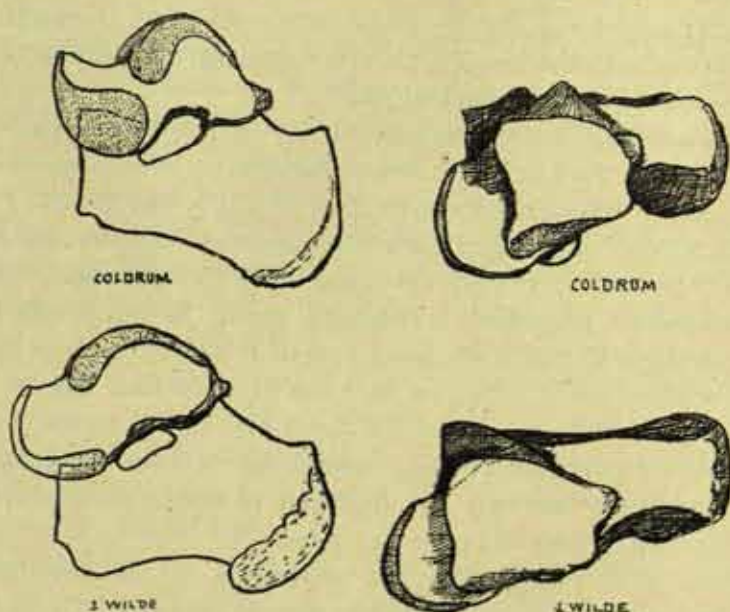


FIG. 5.

extent that a space of only 6 mm. wide separates the upper and anterior articular surfaces of the bones (Fig. 5). In Jonathan Wilde the separation is 14 mm. On the upper surface of the neck of the astragalus there is an impression—not an articular surface—caused by this surface coming in contact with the adjoining border of the tibia when the foot is bent against the anterior surface of the leg. (See Professor Arthur Thompson, *Jour. Anat. and Physiol.*, vol. xxiii, p. 616; vol. xxiv, p. 210.) It is evident that the ankle and foot movements were different in the Coldrum people and that difference is chiefly due to freer and more extensive movements at these joints. The foot was more inverted—the great toe and inner border more turned inwards than in modern feet. It is evident, too, from the comparison given in Fig. 5, that the os calcis was relatively short and wide in the Coldrum people.

In the under surface of modern English heel the external plantar tubercle takes a prominent place by the side of the larger internal tubercle; in races which walk bare-foot the external tubercle is relatively small and this is the case as

regards the Coldrum heel bones. The metatarsal bone of the great toe is short and strong and its proximal articular surface is directed outwards as well as backwards, indicating that the great toe was turned inwards or set at an angle as regards the longitudinal axis of the foot. When all these characters are summarized we see that we are dealing with a race with short broad feet, in which the joints were strong and the movements free and extensive. The characters are such as we should expect to find in a race where the feet were actively used in locomotion and were untrammelled by modern foot gear.

Disease and injury.—No trace of healed wound or injury was seen. In the vertebrae and some of the bones of older individuals there was clear evidence of chronic rheumatism. Caries and abscess of the teeth are absent.

Humeri.—Fourteen individuals are represented; three bones are almost complete; seven are fragmentary; four are adolescents or young, one being under a year old. The three complete bones measure in their total length: 321, 315, 328 mm., giving a mean of 321 mm. All of these are probably males. In all the impression for the deltoid muscle is raised, prominent and triangular in shape. At this impression the transverse and dorso-ventral diameters are in these three humeri 25×22 , 22×23 , 18×22 , there being thus a considerable variation. At the middle of the shaft the same diameters are 20×20 ; 21×19 ; 20×18 mm. The characters of these three humeri are also indicated by the following measurements: proximo-distal diameter of the head 46, 44, 44 mm.; transverse diameter of head and great tuberosity combined, 50, 47, 50; epicondylar width of lower extremity, 65, 60, 60; breadth of the trochlea, 47, 42, 43. The upper arm bones are not massive nor do they indicate great muscular strength.

Radius and ulna.—The bones of the forearm are fragmentary, there being only one complete radius, the total length of which is 245 mm. There are parts of the radii of ten individuals, two of these being adolescents. The fragmentary ulnae represent ten adults, four adolescents and three children. The ulna is bent at the junction of the shaft with the upper extremity so that the concavity of the curvature is directed to the flexor and radial aspect of the limb.

Shoulder and pelvic girdles.—These are so poorly represented that a short paragraph will suffice to mention their characters. There are parts of six clavicles, one being of a child at birth, the other seven adults, one showing lesions due to chronic rheumatism. In only one case can the length be estimated (150 mm.). There are three imperfect scapulae and numerous fragments. In one—that of an adult male, the axillary border, from glenoid to lower angle, measures 120 mm., from glenoid to vertebral border 100 mm. Fragments of the pelvic bones of eleven individuals are preserved, all ages being represented. The os innominatum is nearly complete in two males. The diameter of the acetabulum in each of these is 51 mm.; the distance of the anterior superior iliac spine from the posterior inferior is 137 in one and 167 in the other. The total length, from iliac crest to ischial tuberosity, is 198 in the first and 200 mm. in the second.

If one turns to the important record which Mr. Parsons made in this Journal

last year of bones from a Saxon cemetery of the seventh to eighth centuries near Folkestone, it will be seen that the Coldrum and Folkestone bones are closely alike. Yet it is possible that two thousand years or more may lie between the dates of the Coldrum and Saxon peoples. So far as the evidence goes one may conclude that the people of pre-Christian Kent were physically not very different from the Kentish man of the Christian period.

Explanation of Illustrations in Text.

- FIG. 1. Outlines of the vertex and profile of crania Nos. 2 and 3. The outlines were made on millimetre paper one half the natural size. The measurements and plane of orientation are indicated on the drawings.
- FIG. 2. Outlines of the vertex and profile of crania Nos. 6 and 8. A bregmatic wormian and interparietal are present in No. 8.
- FIG. 3. Outlines of the vertex and profile of cranium No. 9, with frontal (coronal) drawings of Nos. 7 and 9.
- FIG. 4. Outlines of the frontal views of crania Nos. 2, 3, 6, 8.
- FIG. 5. Profile and vertical views of the Coldrum astragalus and os calcis compared with the same views of corresponding modern bones (J. Wilde's). Reproduced half natural size.

APPENDIX.

DISCUSSION OF PAPER.

MR. A. L. LEWIS: I entirely agree with all that Dr. Keith has said respecting the value and interest of Mr. Bennett's work at Coldrum. I first became acquainted with that monument in June, 1869—just 43 years ago; I had been to see the stones in Addington Park, where I met an intelligent countryman, who told me of the Coldrum stones and took me to them. He also gave me an object found there or thereabouts, which he thought might be part of a backbone of a fossilized whale, blown out of a volcano, but which proved to be a mediæval drain pipe cut out of a solid stone. In July, 1870, I went again to make a plan, which was published with some notes upon it in *Anthropologia* in 1874. In 1878 I went there again by appointment with Mr. Flinders Petrie, who was then surveying the monument and met him for the first time, and from that time I saw it no more till last week, when Mr. Bennett kindly devoted a day to explaining to me what he had been doing there. I then found that during the last 34 years some little changes had taken place; the interior of the chamber had of course been cleared out, and, although Mr. Bennett had filled it up to the level at which he found it, the inside was a foot or two lower than it was when I first saw it: at that time there were two stones forming a vertical division of the chamber into two parts and only the tops of those stones were visible; now one has disappeared, and the other is lying on the slope outside the chamber. In 1869 a large stone, which now lies at the foot of the only stone or the lower level which is in an upright

position, was leaning at an angle of about 45 degrees, from which it has since fallen nearly flat. In other respects my plan of 1870 remains substantially correct except as regards a dotted line which I put on the higher level to suggest that the fallen stones there had formed a circle or oval, separate from, and to the west of the chamber. This I regard as a mistake, as I am now convinced that the stones on the upper level are the remains of a rectangle which enclosed the chamber, and that those on the lower level have probably formed part either of the enclosure or of the chamber itself. I have no doubt that when the monument was constructed the higher level extended somewhat farther east than it does now, and that the chamber had a closed end, which would now be impossible, and that the enclosure passed very near that end, or that the end even formed part of the enclosure. It may, however, be a question whether all the stones on the lower level came down from above, or whether there were a separate monument or monuments there; the facts that one stone of those below is standing, and that another, now flat, formerly leaned against it, are in favour of the idea that they formed part of a separate erection on the lower level, but I think it not impossible that they may have slipped down from above: a little excavation to ascertain to what depth, if any, the standing stone is fixed in the ground would go far to settle this point.¹ In any case this large rectangular enclosure with a chamber near one end of it is, so far as I know, the only one quite of its kind in the British Isles, but the form is not uncommon in Scandinavia and Germany. I have brought with me a picture of one in Denmark, from a book by Worsaae, and some of others near Frankfort and in Hanover, reproduced in Borlase's *Dolmens of Ireland*, which are exactly of the form found at Coldrum; Borlase's authorities are Bekmann (1751) and Von Estorff (1846); the "hünenbedden" which they describe, appear to have occurred in groups, and stone, bronze, and iron objects seem to have been found in and about them; the conclusion Borlase draws is that there were "late secondary interments the remains of which were commingled with those of the more ancient ones in a place which traditionally was a tomb." It is well known that, if a line be drawn on a map of England from Hull to Southampton, all our rude stone monuments will be found to the west of it, except the group in Kent, of which this Coldrum monument is one; and taking into account its specially German form, its comparative isolation from the majority of the British stone monuments, and its practical contiguity to those of Germany, it seems probable that the stones at Coldrum were set up by a small prehistoric colony which came across from Germany and up the Medway. I gather from what Dr. Keith has told us that this view fits very well all the facts that the skulls and bones have revealed to him, and that this is another example of what we knew before, namely, that the population of Britain was considerably mixed before the Romans came here.

PROFESSOR G. ELLIOT SMITH stated that the earliest forms in Egypt and Northern Africa were oblong and square, resembling those of Coldrum, while the later ones were circular. He thought the oblong shape being found over such a wide area was due to the spread of civilization. PROFESSOR THANE said the Kentish types of crania were similar to those of the Mediterranean race. DR. SHRUBSALL asked if similar types were found in Denmark and Scandinavia.

¹ This has since been done, thus proving its original vertical position. F. J. B.

MR. SMURTHWAITE said he quite agreed with the importance of Dr. Shrubbsall's remark and pointed out that the oval or Iberian type, similar in all respects to those of Coldrum, were found from Germany to Sweden. The Frisians were mentioned by Beddoe as being an oval-faced race, and the speaker described his visit to the Isle of Marken. He found the majority of the people belonging to the oval or Iberian type, though there were some other types in lesser quantity.

The Frisians were acknowledged by authorities to be purest in Isles of Marken and Ur.

In Sweden, Retzius stated there were two types in the Stone Age, one dolichocephalic and the other brachycephalic. The former contained two types, one the oblong or Teutonic, and the other oval or Iberian, while the brachycephali contained the four facial forms of the Remian, Ligurian, Magian, and Celts. The speaker said that the oblong or Teutonic type was found along Northern Africa, though possibly not so predominant as the oval shape, while the contrary occurred in Sweden.

He quite agreed with Professor Keith in the persistency of Neolithic types to the present time, and that the cranial characters of the Coldrum skulls he had found well marked in children's heads during the medical inspection of school children. Not only the Coldrum, but the five remaining prehistoric types. He pointed out the difficulty of finding a pure race on account of the migrations of different tribes, instancing the migration of one race, followed by a second, with the suggested total extermination of the first one. This second race was followed by a third, and decimated and driven into the hills of the west; whereas instead of exterminating the earlier races, there was a gradual intermixture and blending of all three, with a continuity of these three types to modern times.

Referring to the shape of the dolmens, coinciding with those of both Germany and Scandinavia, and also those of Egypt and Northern Africa, he thought they might possibly be due to certain races, though he was more inclined to agree with Professor Elliot Smith until we had some further information or we had more definite ideas of what constituted a race or races.

THE FIJIAN CUSTOM OF TAUUVU.

BY A. M. HOCART.

Tauvu is a relationship between two groups, whether tribes or sub-divisions of a tribe. Two groups that are *tauvu* to each other exercise in their mutual relations certain privileges of appropriation and ill-manners, called *veitauvutaki*.¹ These privileges are thus described by Liwake of Lakemba: "It is like *vasu*²; if a man goes to another place, where he is *tauvu*, he can slaughter pigs for his own use without asking leave; *veitauvu*³ may abuse each other and not resent it." I draw the reader's attention to the word *vasu* and the use of bad language.

A Lomaloma man says that if a stranger goes into a village and jokes, strokes or ruffles the head of a villager they know he is their *tauvu* because the head is "a respected part" (*tikina vakarokorokotaki*).

Keni Naulu of Lomaloma says *tauvu* use bad language to each other and are not aggrieved by it; it is just the same between men and women as between people of the same sex; on meeting they will say: "Where does this son of dead parents⁴ come from," or "this dead body."⁵

When the people of the island of Kambara turn up the soil to plant, the water of Oloi in Viti Levu becomes turbid, whereupon the people of Oloi say: A land of low caste (*yavu kaiki*), dead bodies.⁶ This is the language of *tauvu* (*vosa vaka tauvu*). If the people of Kambara go to Suva and lack food, they make a trip to Oloi and get it: "The people of Oloi's part is to use bad language."

Enare Ravula, of Namata, tells me that if their men go to Namara, their *tauvu*, the women of that place will pull off their good kilts and appropriate anything they fancy, and for that reason Namatans never put on good kilts when they go to Namara.

It might at first appear that the etymology of *tauvu* settles the origin of the custom at once: *tau* is a vague word of which the general sense seems to be "to fall down quietly in its proper place": in Dhakaundrove⁶ it gives a reciprocal sense to kinship terms, for instance, *tautadhi* = brother and brother⁷; it has a similar force

¹ *Veitauvutaki* is in form a reciprocal verb, and means "to exercise the rights of *tauvu* towards one another"; but it also expresses the relationship and the custom. A man says "He is my *tauvu*," but "He and I are *veitauvutaki*."

² Sister's son.

³ *I.e.*, two people *tauvu* to each other.

⁴ *Iuve ni yali*, *i.e.*, orphan.

⁵ *mbakola*, *i.e.*, man slain in war and destined to be baked.

⁶ Dh = th in then, this.

⁷ Mbauan: *veitadhini*.

in the word *tauvu*; this makes it likely that the term originated in Vanua Levu or Taveuni. *Vu* means stem, origin, ancestor, and in some parts, such as Naitasiri, great-grandfather. The whole must therefore mean "having a common ancestor."

That is the unqualified theory adopted by Mr. Basil Thomson.¹ Unfortunately in anthropology, as in all other sciences, a theory to be true must not merely present itself readily to the mind: the existing facts must be deducible in every detail from its premises: its power to explain is the test of its truth. Now, given common ancestry, we cannot deduce thence the "running riot in the village,"² the reckless appropriation of food and clothes, and licensed impudence. Not only so, but the customs of *tauvu* and descent from brothers are entirely repugnant to one another, and therefore the theory must be wrong. Mr. Thomson, it may be said, has actually traced a common descent to "the marriage of the sister of a high chief with the head of a distant clan"; but everyone who is at all conversant with kinship knows that according to most classificatory systems there is all the difference in the world between agnates and cognates, and that the two cannot be interchanged; what is true of descendants from a brother and sister does not apply to descendants from two brothers or two sisters.³

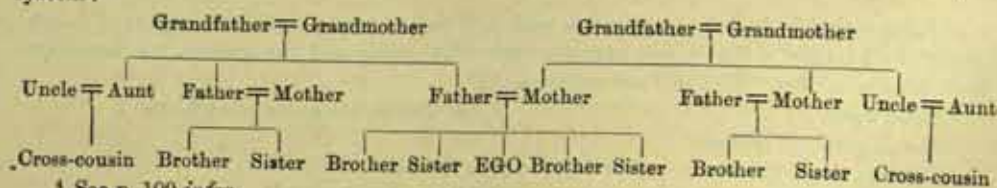
I said the tie of *tauvu* and descent from two brothers are repugnant to one another, for descendants of brothers are brothers and sisters, and insolence is unbecoming between brother and brother, or brother and sister. Waisea of Rewa very properly lays down that tribes using horse-play to one another cannot be of common ancestry (*vu vata*), or they would behave modestly to one another (*veimandualaki*). I have described at length in a paper on Fijian heralds and envoys⁴ the etiquette to be observed between brothers; I shall here merely sum up: A younger brother must be very respectful to his elder brother and do his bidding; the elder, on the other hand, must not be too free with his junior but keep up his dignity and not make himself cheap by seizing his property *at random* or joking with him. Even more incompatible with Mr. Thomson's theory are the rules obtaining between brother and sister; as is well known, they avoid each other as much as possible. According to Alipate Vola they may not put on the same clothes (*tauvu* steal them off each other's persons). Ovetaia Mdreketi says a woman may not even use her brother's comb (*tauvu* habitually touch each other's heads). In the presence of his sister a man must study his speech that nothing may be improper (*tauvu* make a point of using bad language to each other).

We are not surprised, therefore, at finding that though Namuka is a colony of

¹ *The Fijians*, p. 5.

² *Ibid.*

³ For the less conversant reader the following scheme will be a reminder of the Fijian system:—



⁴ See p. 109 *infra*.

Nggalinggali, Kambara, yet the two are not *tauru*. The Oneata chiefs come from Nukunuku in Lakemba, yet Nukunuku is not among the *tauru* of Oneata. The Polynesian population of Ono was displaced by settlers from Wadhiwadhi, Lakemba, yet Ono has its *tauru* in Viti Levu, not in Lakemba, and behaves decently towards Wadhiwadhi as agnates should do. The family of Lawakilevu in Ndravuvalu, Totoya, were so pugnacious that they were driven out and went to settle in Kandavu, calling their new home Ndravuvalu; though they still go to make copra in Totoya, Pauliasi, one of them was careful to state that their common descent did not involve the tie of *tauru* (*vakaveitauru*). Nggarani in Nodho are refugees from Naitasiri, and once lived with the people of Navuso, but they are not *tauru* to them. Naitasiri and Soloira claim to be fellow countrymen (*kaivata*), and their claim must be allowed since a Naitasiri man knows the exact relationship in which he stands to the men of Soloira. Now the men of Soloira may kill fowls, slaughter pigs, and dig up yams; on the other hand, they may not hit each other; they use each other's property, but observe decorum as brothers should do. Simione of Soloira, more precise in distinguishing the relationship between his tribe and Naitasiri, defines *veitaurutaki* thus: "*Tauru* is due to a lady marrying into a place and her son and descendants being consequently sister's sons (*vasu*), and using the right of sister's sons; *kaivata*, on the other hand, are due to civil dissensions (*veisei*), as if two brothers quarrel and part, or if a family grows large and splits up."¹ The people of Viria have both *tauru* (namely, the tribes of Naviti Levu and Dheia, and the village of Ovea), and *kaivata* (the Soso tribe in Mbau); they are *brothers* of the Kai Soso (*veitadhini*), take their pigs, but do not use horse-play (*veiravu*) with the women; this is a custom of *cognates* (*veivekani*). Below Viria, Natoaika has also *tauru*, Waimaro and Vungalei, and as *kaivata* Navutu. If the men of Navutu go to Natoaika they slaughter pigs and bake food, but if they appropriate anything, they come and say so afterwards (as brothers would do), whereas *tauru* do not; Navutu and Natoaika do not indulge in horse-play.

If we search among degrees of kinship for an analogy with *tauru*, we shall find it in cross-cousins (*veitavaleni*); that is, children of a brother and a sister, not children of two brothers or of two sisters. Here is a description how *veitavaleni* behave:

"Cross-cousins may take each other's property and report it afterwards²; . . . Cross-cousins are like persons *tauru* to each other; they may make improper jests. They may take a whole taro field without blowing the conch, as the sister's son (*vasu*) does. If man and woman (*veindavolani*), they may take each other's property without leave. They are impudent."

¹ I must here observe that *tauru* is not a Naitisirian term, and most probably not proper to Soloira either; but Simione is identifying their own *veivekani*, or *veitambani*, or *veikakimani*, or *veimbatiki* with the coastal institution, and is, I think, justified in so doing when speaking Mbauan, as the differences are rather in the words and in details. I regret that, at the time, I was not aware that *tauru* does not belong to the inland vocabulary. The same applies to the following cases that are all drawn from the Rewa valley.

² There is no obligation to do so; he may leave his cousin to find out.

Thus says Vola. Ovetaia is fuller still: "It is like a form of *tauvu* relationship: a cross-cousin goes into the house, sees a shirt and says: "The shirt is mine," and walks off with it; the other inquires: "Where is my shirt?"—"So-and-so has taken it," say they. "O fie! the cad,"¹ says he and that's all; he may abuse his cousin, but not take back his property: it would be low.² Cross-cousins, man and woman, are impudent to one another; *ndavola* are *tavale* of opposite sexes; they may call each other "Cad," and pull their hair. Fornication between them seems light; people say: "He disposes of his wife; they will marry hereafter." They are called husband and wife (*veivacatini*), even if they are not married. An old man seeing a pretty cross-cousin will say: "You are my wife," whereat she is angry, and says: "I, your wife! An old man like you!" If a girl wants clothes for a festival, she tells her male cross-cousin to get them. Formerly, if they had an intrigue and did not marry, it would pass.

The theory I wish to oppose to Mr. Thomson's has become apparent. *Tauvu* is based on exogamy: two tribes that used to intermarry are *tauvu* to one another; the same rules govern the behaviour of *tauvu* and cross-cousins because both are cognatic relationships.³ So much is certain; more speculative suggestions may be held over while I bring forward instances.

Lakemba and Mbengga are *tauvu*. The Lakemban version is that Raluve, daughter to the Lord of Lakemba, climbed a *mamba* tree and came down in Mbengga and married the Lord of Mbengga. "Mbenggans," concluded Poasa, "are children of the woman, and Lakembans children of the man; Lakemba and Mbengga are cross-cousins." The Mbenggan version is that a woman of Numbulevu in Sawau, Mbengga, was taken to Rewa, passed on to Mbau and thence taken over to Lakemba, where she had a son, who remained in Lakemba, and a daughter, who went to Tonga.

Waitambu and Vakano in Lakemba are *veitauvutaki* because of two stones: the ancestor (*vu*) of Vakano had intercourse with the ancestress of Waitambu; they lay down, and did not go home, but turned into stone; these stones lie in Natui nika, the taro land of Waitambu.

The tie between Vanuaso in Ngau and Dhakaundrove dates from the time when the people of Dhakaundrove were still in Vanua Levu. There they once held a great game of *tingga*. The men of Vanuaso attended and won. Two women of Dhakaundrove fell in love with two of the victors, and, being repulsed, swam out to sea after their departing canoe and were turned into stone.

Mr. Thomson has given in his book, an outline of the legend which explains the *tauvu* relationship between Nodho and Nayau. The essence of it is this: a woman of Nayau was swallowed by a shark. She ripped its bowels with a shell. In pain the shark swam fast and entered the Rewa delta; it stranded at Nodho.

¹ *Asombo! na kaisi la.*

² *Kaisi*, i.e., commoner, low born, serf.

³ As the reader will see, there is no great credit in the discovery since natives will tell you so in as many words; it is merely a matter of knowing the kinship and noting what they say.

The people going to cut up the fish, found the woman inside and led her to the chief of Nodho who took her to wife; they had a son who in time went back to Nayan. How the Nayan people in recent times exercised their rights of *tauvu* will be found in Mr. Thomson's book.¹

The tribes of Vuna, in Sawani, and Nduanuku, in Dholoi Suva are *veitambani*, that is, they intermarry; they are also called *tauvu*, though improperly, I think; yet the fact that *tauvu* is identified with *veitambani* is significant. The ancestors of the two tribes were cross-cousins.

The tribe of Dhelia, in Vuniniundrovu, and Nasau in Nakini² are *tauvu* because Tau, the ancestor of Dhelia, used to go and sleep with an old woman of Nakini. He would go to her place: "Gossip (*mbui ni ngone*), let us sleep together." "By and by," she would say, "eat first." Then she would fill him full with *mbele* (*Abelmoschus Manihot*), and so on till he fell asleep; then she would say: "Wake up, let us sleep together." "Oh! no," he would say, "let me sleep first."

Roko Nemane of Totoya says that a daughter of Kumbua Vanua of Moala married into Tungua, Tonga. "Hence arose her descendants. This is a great *tauvu* in Ketei (Totoya), and the *tauvu* extends to the whole of the Moala side³; it is due simply to the sister's son (*casu*), whereby they have common ghosts." The custom of *tauvu* is, I believe, unknown in Tonga; but it is sufficient to us that Fijians should look upon Tongans as their own *tauvu* on the ground of intermarriage.

One of the most decisive cases I know is the *tauvu* of the Lovoni tribe in the interior of Ovalau with the Solomon Islands. It is related that Vaula, the arcestor of Moturiki, and Raka Vono, ancestor of Lovoni, went to the Solomons and brought back a chief's daughter. She preferred Raka Vono and became his wife. "She had the septum of her nose pierced, so Raka Vono said: 'Let our *matanggali*⁴ always have their noses pierced,' so they had their noses pierced till the advent of the government." The reason why I call it a decisive case is that it is an invention by some old man of Lovoni; it shows that there is no doubt in the minds of the old men as to what constitutes a *tauvu*; and fake as it is, it has been taken most seriously by both parties who carry it out into practice.

Watisoni, of the Vunanggumu tribe in the highlands, has no legend about his *tauvu*, the Naremba tribe in Mataiwailevu, but explains: It is due to the women inasmuch as they come from them to marry with us. They take each other's property without leave, seize pigs if they want to make a house for house builders. This comes from the ancestor, the woman, the ghost (*tevoro*)⁵ that was given in marriage, whereas the women of Muaira and Narokorokoyawa are human, so they are only relatives (*veiwekani*).

¹ I must take exception to the statement than Nayan is "poverty stricken." Lau is the wealthiest province in Fiji, and Nayan comes about third for wealth in Lau. I should also be grateful if Mr. Thomson would publish his evidence that Nayan was once an important island. I have so far failed to find any.

² Both inland.

³ Non-exogamous clan.

⁴ Totoya, Moala, and Matuku Islands.

⁵ All these words may possibly be plural.

We may wind up our evidence with Saimone Ngonedha's theory of *tauvu*. As a matter of fact, the word does not belong to the vernacular of his tribe of Waimaro, but he translated the local *veikakimatani* by the coastal *tauvu*, and as he is one of the rare Fijians who observe customs of other parts, his testimony has great value. He distinguishes three kinds: (1) the *kalou vata* or *vu vata*: the former is usually translated "having common gods": the latter means "having common ancestors"; (2) *veitambani* due to intermarriage, thus Nakorosule can freely take the property from Matailombau because of the women brought over from that tribe; (3) *veimbatiki*, each of which is not allowed by the other to eat certain foods (*veitambuki* in Kakana). I hope at some future time to deal with the second and third; the first, according to Saimone, can insult each other just like the second.

Passing over into the totally different West¹ we get *tauvu* identified in Mba with their own *veikila* or *vikila*. *Veikila* means properly to know each other, and Fijians only know each other when they are related. In the west it is always applied to intermarrying *matanggali*; in Serna and Nandi it is used of cross-cousins.

I think the theory has so far answered the requirements laid down at the outset: it is not merely plausible at first sight, but explains the details naturally, according to a strict determinism, with one exception, however, which threatens to shipwreck it. It is quite common to hear the bond of *tauvu* defined as *kalou vata*, or, as they now say, *tevoro vata*²; the orthodox translation of this is "having common gods"; now since each gens has its so-called "god," and membership of the gens is patrilineal, and therefore the gentile cult is also patrilineally transmitted, how can *tauvu* have common "gods," being as they are cross-cousins and related only through their mothers?

To quote evidence: Liwake of Lakemba says: "*Tauvu* are due to common *tevoro*." Inia of Tamavua ascribes it to common *kalou*. In Ndravo they say Vakano and Ndravo are *kalou vata*. Yet when we examine the facts we find that tribes and *matanggali* having the same "gods" are not *tauvu*, whereas gentes *tauvu* to one another rarely have the same "gods"; indeed, I have not been able yet to find an instance in which they had. Thus Tarukua in Lakemba had a cult of Ulunawale (head only): the gentes of Tanggalevu in Tumbou and Nanggalitoka in Waitambu called their "god" Ulupoko (body head), which is a Tongan form, yet these three are not *tauvu*. Sakaraia of Narodhake identifies his Mbatinggoka with Tokairambe of Tumbou, yet Narodhake and Tumbou are not *tauvu*. Namuka is a colony of Nanggarini in Nggalinggali, Kambara, and it has the same "god," yet they are not *tauvu*. The gens of Dheyekena in Lakemba and the village of Tokalau in Kambara have the same "god," Tui Vakano, but they are not *tauvu*, only relatives (*veivekani*). Ovea and Mbau both counted among their "gods" the snake Ratumaimbulu, but they are not *tauvu*.

¹ West of the Tomaniivi and Muanivatu range a different language and different social organization prevail.

² In a paper "On the Meaning of the Word *Kalou*" (*Journ. Roy. Anthropol. Inst.*, 1912 vol. xlii, p. 437), I have shown how *tevoro* (devil) has become substituted for the native *kalou*.

On the other hand, the *tauru* relationship of Ovea in Vitilevu and Waitovu in Ovalau, which Veni of Ovea ascribes to "common gods," to wit a snake, is by Jo of Waitovu traced to Tunodho, a "god," whose child went to Ovea; Tunodho has no animal connected with him; Mbeledhi of Vuna traces the same tie to Valematau, who also has no animal. In fact, whenever I have investigated both ends of a *tauru* relation, if any particular "god" was mentioned, it was a different one in each place. The people of Wakano say they are *tauru* of Ndravo near Mbau because their "god," Tui Vakano, went over to Ndravo; in Ndravo it is Saumaki who went over to Vakano. Saimone Ngonedha gives the tribes of Waimaro and Nandereivalu as instances of *kalou vata*; now I have noted down all the gentile *kalou* I could find in Waimaro, and have all the chief ones from Nandereivalu but never a common "god" could I discover. His other instance of *kalou vata* is founded upon the fact that Nggamau, ancestor of Waimaro, defecated in the mouths of Ndidhimo and Ndadhamo, ancestors of Ndrekeniwai: not a hint therefore of common "gods" in the very explanation.

It is evident that the translation of *kalou vata* cannot be right. All our troubles come from our translating *kalou* "gods." I have shown in the paper just mentioned that *kalou* is simply "ghost." If we apply this here, it follows that *kalou vata* means simply "with common ghosts," in other words with common forefathers; which is perfectly true, for if two families intermarry frequently, the paternal ancestors of the one will be the maternal ancestors of the other.

It is not even necessary to suppose that *kalou vata* actually means a community of ghosts; literally, it means "ghosts together," and may merely refer to a close connection between the ancestors on both sides, as between Nggamau and Ndidhimo and Ndadhamo, or between Nggamau and the ancestor of Nandereivalu as brothers, or between the ancestors of Vuna and Nduanuku as cross-cousins.

The point cannot be absolutely settled till we have reconstructed the ancient form of *tauru*; for this relationship must be an old one, or, as Watisoni expresses it, goes back to the ancestor (*vu*), the ghost. Can we venture to be more precise and say that it goes back to a time when ancestors were commonly spoken of as ghosts, and the relation of *tauru* was then intimately connected with the ghost-cult? The relations of *veivakani*, *veikilai* and probably also *veitambani*, would belong to a later and more secular stratum. It is, perhaps, not quite beyond hope to fix the chronology of this *tauru* stratum, for highland pedigrees commonly lead back to an ancestor, some seven or eight generations ago, who is a ghost (*kalou*; modern *tevoro*), and had human offspring; we must allow a longer time on the coast. Are we justified in seeing in this fabled descent the record of a true passage from a religious to a secular view of ancestry?

Another question that suggests itself is whether the *tauru* relationship is derived from the dual organization. It would seem impossible at first sight that all the tribes that are not connected by *tauru* should once have been moieties of the

¹ In Nandi and Vunda the equivalent of *tauru* is *mato kila*, lit. dead know, i.e., related dead? It has there a religious basis.

same tribe, separated, as they so often are, by a hundred miles of water or more. But it is not unreasonable to suppose that the dual organization has existed in Fiji, that when intermarriage began with other groups than the moiety of the same tribe, all the privileges of the moiety (*tauvu*) were extended to the new relatives, only intensified, through the same unknown reason through which the sister's son's right (*vasu*) has become intensified. In other words the present *tauvu* would be formations on the analogy of the dual system; they would at once mark the expansion of that system and the weakening both of the tie and its religious character due to excessive multiplication; the *tauvu* was then gradually debased into the modern *veivekani*, *veikila* and *veitambani*.

Here we may leave *tauvu* for the present with its many further potentialities. Future research may throw more light upon it. It must be remembered that it is properly a coastal institution, though the term has come into use in the highlands. Vanua Levu, to which one informant and etymology refer it more particularly, is still unknown; it may be holding in its keeping the key to these problems.

Let me end with a word in defence of native accuracy and truthfulness. The only serious obstacle we have encountered has been due to a mistranslation of the word *kalou*, which for being universal is not more excusable among early residents: for the resulting contradictions the white man, and not the native, is to blame. Again, we have seen how apparently conflicting statements may be perfectly reconcilable; it may be equally true, if the two places intermarried, that a lady of Lakemba went to Mbengga as that a lady of Mbengga went to Lakemba; that Saumaki went to Vakano, as that Tui Vakano went to Ndravo; that offspring of Ratumaimbulu went to Waitovu, as that a child of Tunodho went to Ovea. Undoubtedly it often happens that every native tells you a different story, but that may simply be that there are many different stories, all of which are true.

FIJIAN HERALDS AND ENVOYS.

BY A. M. HOCART.

THE study of kinship involves a great deal more besides relationships and laws of marriage; it is inseparable from the study of social institutions, whether these are the outcome or origin of kinship customs. Of this interaction Fiji offers many an instance from which I select two, heraldry and diplomacy, for the joint subject of this paper.

I begin with heralds.

First, let me summarize, for those who are ignorant of the literature, the nature and functions of Fijian heralds. The Eastern Fijians¹ call them *mata ni vanua*, that is "eyes of the land"; the word *mata* has, however, lost its figurative sense and has come to mean a messenger, an envoy, and lately a gazette. Their functions are chiefly connected with feasts and presentations of fabrics (*iyau*); it is their duty to speak the compliments or apologies that always accompany a gift, or to acknowledge one on behalf of their chief; they make out the portions of a feast and call out the names of the recipients; at kava-making they keep an eye on the beverage and determine the amount of water and of straining. For our purpose it is important to note that the herald is sent on errands and that he is specially connected with the distribution of food: that in many places in the hills, if not everywhere, he has the exclusive right of eating up the leavings of the chief; that he is the chief's constant attendant at meals and at kava; is humble in his presence, and yet claims, and is acknowledged, to come next to the nobility in rank.

If we look for the kindred that most closely resemble the chief and his herald in their mutual relations, we shall surely fix upon elder and younger brothers. Here are some of the rules which Alipate Vola of Lakemba deems it proper for such relatives to observe—

"A younger brother may not take the property of the elder, but the converse is possible to an extent which depends upon the elder; . . . brothers in the nobility do not talk for the sake of talking, or cheerfully; . . . the elder addresses the younger."

The deference shown by the cadet to the senior is a familiar sight; while all the other people present sit round in an oval with little respect to rank, the younger brother always sits at the end near the door, and never seems to face his elder brother nor yet to turn his back to him.

¹ By Eastern Fijians in this paper I mean Fijians east of the Tomanivi and Muaniyatu range in Viti Levu; by Western Fijians those west of that range.

A man's own younger brother, born of the same father and mother, is called his "after eater" (*kana e muri*), because he waits till his brother has finished in order to fall to. It is also the duty of the youngest to look after the food baskets, which used to be hung up at the lower end of the house. In a heated discussion an opponent of inferior station will be silenced by the remark: "Do not speak, you are he that sits by the food basket." The younger brother is also called "the basket bearer" because he bears all the burdens.

In Lakemba these rules apply only to own brothers, not to the mass of half or tribal brothers, for the excellent reason that it is impossible to determine the order of seniority. A man is not "after eater" to his half-brother because, as one informant told me, "in polygamous days there were always a number of wives pregnant at one time, and so the order was not plain." Yet great respect is shown to certain prominent persons among the tribal brothers, namely, the eldest descendant of the eldest son. Sons of great ladies, or leading members of a family also form the centres of groups consisting of own brothers, tribal brothers of inferior rank or "small brothers," and bastards, these are dependent upon him and sent on errands. I shall take instances from the pedigree of the Lakemba nobility. I shall only give of this extensive genealogy such a fragment as will be of use in the course of this paper.

Vola will observe the strictest silence and modesty in the presence of Salesi, the eldest son of the eldest son of Kilai, and the most important person in the clan¹ of Vatuwangga; also in the presence of Liwake, as eldest son of a younger son of the eldest son of Malani, the elder. Apart from Finau, who, as High Chief, commands the respect of every one, he does not show the same deference to others; for the senior branch of Naivi has been worsted in civil war by the juniors. On his mother's side Salesi can use Ratu as his messenger, because Maopa is a "little sister" (*tadhinggu lailai*) to Melaia.²

I claim no credit for noticing the analogy between heralds and younger brothers; as often happens in intensive study of a small area, the theory turned up as a fact before it could be imagined as a hypothesis.

It is the west that shows us heraldry in what seems to be its most primitive form, as indeed the west has generally a more rudimentary social structure. In Tukuraki, in the hills south of Neilanga,³ Mba, I was informed that the *mata ni vanua* was Madhiu of the clan of Nakula, because he "stands right behind in the order of nobles." A Rakiraki man commented: "The youngest branch are servants, make food for the chiefs, and are sent on errands." I had no time to get pedigrees, but I learnt that the men of Nakula were divided into four "halls"⁴ in the following

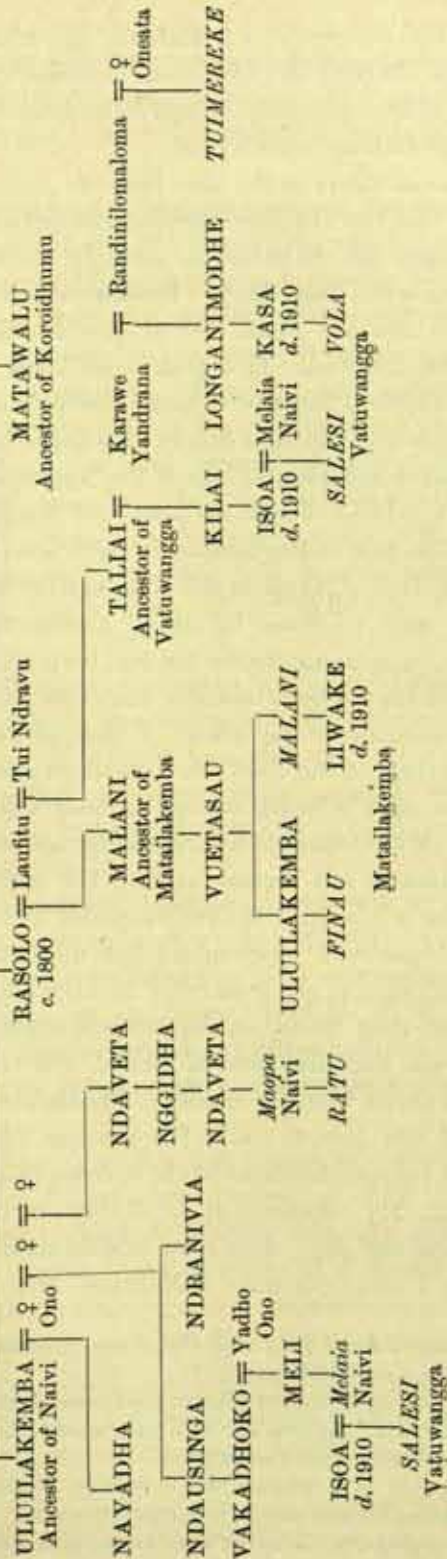
¹ I translate thus *matanggali* although it is not now, in most parts of Fiji, an exogamous group.

² It will be noticed that the marriage of Isoa and Melaia is one between relations who formally ought not to marry; this is common in the nobility.

³ Officially Nailanga, but that is a Mbauan form. I have to express my thanks to Mr. Lelean of Nailanga for directing me to that village and giving me every assistance in getting there.

⁴ *Mbeto*; Mbauan: *mbure*.

Common Ancestor.

NDELAIVUNGALEI
KatumbalevuClan of Katumbalevu proper
Household heraldsNIUMATAIWALU = Taran = ♀
Katumbalevu Totoya Nukunuku
Ancestor of Vuanirewa
nobles

order: (1) Koroilengga; (2) Natawa; (3) Makaia; (4) Nakorosovivi. Now it is an accepted doctrine in Fiji that all members of a clan are of common descent, and that the halls composing it represent branches of one family.¹ This tends to confirm the Rakiraki man's rule.

I was not aware at the time that the term *mata ni vanua* is foreign to the west, and that the Tukuraki people were merely translating by it a local term. In Neilanga they call the herald *na tutu*, i.e., the stander, because he alone may stand in the presence of the chief. Besides certain functions not fulfilled by eastern heralds, he has the usual one of proclaiming what the chief has to say, and apportioning the food. That post in Neilanga is held by the clan of Taumbere, who are "brothers" (*tadhini*) to the leading clan of Tio and are, in fact, but the younger branch of the same family; the name Taumbere merely means "born late."²

In Nakoromboya, a village of the Nggaliyalatini tribe, there seemed to be no family of heralds, although the name and functions of *na tutu* were perfectly well known. The institution can hardly have been very formal.

The village of Navai in the Numbu tribe does not use the word *na tutu*, but translates *mata ni vanua* by *nduve*; another title is *ndrau ni masi*, or "sheet of bark-cloth," a term applied to the last born because the *tapa* is first cut off for the eldest, then for the next brothers, the cadet getting what is left. The herald used to be *nanunukawa*, "the lowest of men, he was sent on errands, received orders, ate the leavings of the chief's food, went on ahead to give notice." It is doubtful how far his office is formal enough to deserve the title of herald, how far it is even an office. My informants by translating *nduve* by *mata ni vanua* misled me into assuming that he is a formal herald; but carefully considering their description and manner of speaking, we are compelled to doubt whether he is in any sense an official and master of ceremonies; this uncertainty as to his status will prove a serious hindrance to our researches into the origin of Fijian heralds.

Ngaloa, near Serua, on the southern coast, belongs in culture to the western tribes. I was told that *mata ni vanua* was the local title. In the Koroyanitu tribe he is drawn from the family of Maruselino, who is "younger brother to the chief, and the lowest too." His division (*itokatoka*) of Nambili stands in the relation of younger brothers to the division of elder brothers from which the chiefs are elected. My informant spoke of them as the chief's "serfs,"³ they are sent on errands night and day; they roast food at night.⁴

When I asked Seremaia of Neilanga, Mba, whether they had *ikaso* (bastards)⁵

¹ Cp. Fison: *Land Tenure in Fiji*, Suva, Government Printer, 1903. Pp. 3 ff.

² Mbauan: *sudhu mbava*.

³ *Kaisi*: the term is very relative; the general meaning is low born; but the expression *nona tamata kaisi*, "his own low born men," means that they have to do all his bidding; the word *serf* is therefore not inapplicable.

⁴ Roast food is a delicacy which requires constant watching while cooking; it is not usually prepared for common folk, except when sick.

⁵ *Ikaso* is properly the son of a nobleman by a woman of inferior rank or a handmaid, the union of the parents not being official.

in Mba, he explained it as a Mbauan word meaning "younger brothers, and they are heralds (*mata ni vanua*).” In the west they have no bastards (*ikaso*), as descent through the mother does not affect rank; Seremaia's confusion, therefore, between younger sons and bastards is natural, and his identifying both with heralds instructive.

Let us now cross over the dividing range into the east with its more complex social organization. I could find no evidence of a connection between heralds and younger brothers till Nakorosule on the Upper Rewa, and there it seems at first adverse, for the half tribe of Waimaro is divided into three clans: Nakoronduandua, Waimaro proper, and Lase, which claim to be descended from the three sons of Nggaman: Naloe, Matanakanadhe, Tuitokatoka. Now the herald clan is not the youngest but the second, and the chief's clan is not the eldest but the youngest. It is an exception, however, that proves the rule, for the primacy of Tuitokatoka was viewed as abnormal, and ever since the eldest son in Nakorosule has been stupid and the youngest intelligent. Moreover, Nakoronduandua enjoy a certain dignity without power which appears in the fact that a man whose mother comes thence is a great noble, while sons of a Waimaro woman are heralds.

Social organization in Nodho, Rewa delta, seems to have reached a considerable degree of symmetry and complication. The nobles are divided into four clans: Mbatingga, Vunivutu, Nadhonggona, Naloarumbe; to each of these is attached a clan of heralds in the respective order: Naiviyate, Natuki, Tadhi, Naisongovau. *Tadhi* means younger brother, and my informants, both of Mbatingga, said that these four herald clans were the bastards.

Emosi, the herald of the Lakemba chief, explains his position by his descent from Saunikalou, the youngest of three brothers; the eldest, Vunisau, is the ancestor of the present nobility. The tradition is doubtful, but, if it was invented, it was invented according to a model by some one who knew cases in which the heralds were descendants of younger sons; I doubt, however, whether a Fijian would make such a discovery unless it was very evident, for they are as ignorant of each other's customs as British, say, of Russians.

In Lakemba there is another clan of heralds, the household heralds (*mata ni vanua e vale*); this is the clan of Katumbalevu proper. I must explain that Katumbalevu is used in two senses; firstly, to include both the nobles, called Vuanirewa, and their household heralds, and secondly to designate the latter exclusively. The Vuanirewa and Katumbalevu proper were originally one; when exactly they split is not known, but it probably dates from Niumataiwalu, the common ancestor of the Vuanirewa, about one hundred and twenty years ago certainly not before. Here, then, we have historical evidence of heralds belonging to the same clan as the nobility and therefore presumably of common descent with them. We can also see how it comes that a tribe is so often called, not after the name of the leading clan, but after that of the heralds.

Thus we have found that in the west cadets fulfil menial services such as are

assigned to the heralds in the east, and are, in fact, identified with these heralds. The eastern evidence might be somewhat weak in itself, but the west justifies us in making capital of it, and concluding that most *mata ni vanua*, or, at any rate, the earliest, were originally cadets or bastards, though the growth of population and the consequent splitting up of families into clans may have generally obscured the fact by placing the heralds in a different clan from their chiefs.

Our first impulse is to conclude that the heralds were evolved out of the rules of primogeniture: they are merely younger brothers of the chief, and exercise towards him the same functions, only exalted and rendered official by the growth of Fijian society. But there is an opposite theory, suggested to me by Dr. Rivers, which seems equally plausible, namely, that full-blown heralds came in with an invading race, and that their functions were assigned, by all tribes that adopted the office, to the younger brother; thus the etiquette of primogeniture would be copied from heraldry and not *vice versa*. On the one hand, there can be no doubt that heraldry, as indeed the whole pomp and circumstance of the eastern tribes, has been developed under foreign influence, or by another race than the present-day Fijians; on the other hand, it is hard to believe that an informal institution such as we guess the *nduve* to be, is a copy of the complete herald. The uncertain character of the *nduve* compels us to suspend judgment.

In the present state of affairs a compromise between the two theories suggests itself as the most likely, namely, that the functions of the younger brother are earlier; that they gave rise in the west to the despised cadet of the clan doing menial service for his seniors; that under foreign influence these developed into formal heralds enjoying great consideration, and standing next to the nobles in the social order. This would account for a discrepancy between the status of a younger brother and that of a herald which we have rather slurred over; the herald sits beside his chief and directs the whole proceedings, a thing we have never seen done by a younger brother.

Such then would seem to be the origin of heralds within the limits of the Fijian archipelago, but the ultimate origin would be transferred beyond its boundaries to Polynesia; Tonga has heralds that resemble their Fijian colleagues too closely to let us believe that there is no connection between them. A survey of Tonga might give one a clue to their origin, or throw some light upon their interaction with the Fijian institution. The claims of the rival theories, might, however, be settled by a better knowledge of Western Fiji.

I was careful to conclude no more than that most heralds have been younger brothers, for here is, at least, one exception.

Lomaloma in Vanua Mbalavu has two chiefs; the one called Rasau has his heralds in Ndakuilomaloma, a village on the other side of the island. The origin of their dignity was recorded at my request by Keni Naulu: "the mother of this chief (Nggalidha) came from Ndakuilomaloma. His village was Na Korolevu; but sometimes he would go down to Ndakuilomaloma to stay there; now at that time there were in Ndaku some men of Yandrana (on the north coast of Lakemba) of the clan

of Kelo, as Mbudha (Nggalidha's clan) and Yandrana are *tauvu*.¹ While Rasau was in Ndaku they appointed a man of Kelo to be herald to Rasau. The reason why the Ndaku people are heralds is that the men of Kelo dwelt there." I show elsewhere¹ that *tauvu* is founded on intermarriage, and that *tauvu* clans are cross-cousins. Here, then, we have a case of heralds derived from cross-cousins.

We might be tempted to trace the institution of envoys or ambassadors to the same source as the heralds, but though their functions are not unlike, their names similar, and writers like Waterhouse confuse them, we must postulate a different origin.

The envoys are called *mata ki* with the addition of the place to which they are accredited, thus *mata ki Mbau* is the envoy to Mbau. Williams speaks of "a diplomatic corps, the official title of each individual of which contains the name of the place to which he is a messenger When on duty these officials represent their chief . . ." Such expressions as a "diplomatic corps" and "officials" are, of course, misleading, there is no such formal office; the duties belong to the clan and not to the individual, and every clan (at least in Tumbou, of which Williams is speaking) has a place to which it is envoy.

We cannot do better than compare them to the Greek *xenos*; not only do they convey messages to a specified place, but they receive visitors thence, entertain them and introduce them to the chief.

The custom is falling into decay, but even now, if one wishes to find a Kambara man in Tumbou, Lakemba, one is quite safe in looking for him in the Lord of Tumbou's quarters, for this personage and his clan of Tanggalevu are envoys to Kambara and keep up the old ways; when one of the clan was ill with consumption, he went for a change to Kambara, and also to live on his kinsmen there. Some two years ago Kasa of Vatuwangga, the clan of envoys to Modhe, told the people of that island to build themselves a house within his enclosure as a kind of "pied à terre." On the other hand, if Tongan or Mbauan visitors of note came to Lakemba, a member of Vatuwangga, say, would be dispatched to Modhe to order *tapa*, a nobleman of Naivi to Ono to commandeer sinnet, and so forth.

Such is the custom in Eastern Fiji. But in looking for clues it is best to address oneself first to the west, which is, socially, less highly organized.

On the western coast from Nandronga to Vunda there exists an institution called *matekila* or, in Nandronga dialect, *masekila*.

The *matekila* of Nandronga are Nandi, Sambeto, and Vunda; "It is a question of relationship"; Navatukandiri (the chipped stone) is the "root" of the relationship between Nandronga and Nandi; Vatuhorihori between Nandronga and Sambeto; Neilawanitawa connects Nandronga and Vunda. If Nandronga and Nandi are at war, peace is made by the clan of Vunavesi in Nandronga taking whales' teeth to Nandi, or the clan of Navatulevu in Nandi taking whales' teeth to Nandronga; in either case "their very first word" is Navatukandiri. In offering the whales'

¹ See "The Fijian Custom of *Tauvu*," p. 101, above.

teeth the envoys of Vunavesi will say, for instance: "I present this whale's tooth, a small tooth, that you may be gracious, that there be no war, that we may be at peace: long is my speech by the Vatikandiri in Louvatu, *o kei a tū*." Navureimbuto is the clan of the envoys to Sambeto; Mataimburembahanga¹ are sent to Vunda and the two are "true relatives."

An informant from Vunda writes: "The people of the village of Viseisei stand in the relation of *matekila* to those of Sila (the Mataimburembahanga), a village of Nandronga; the reason is simply that they are descended from our ancestors. Whenever the people of that village come to Vunda they will kill pigs and fowls without leave and carry off without leave food and fabrics, and our elders do not once resent it. Our elders will also go to their village and do the same. . . . If war breaks out on the Nandronga side they come to our elders to side with them. . . . It goes on to the present day." The last sentence refers to the free use of each other's property: this is a regular accompaniment of connubium, and the right of cross-cousins all over Fiji.

A Nandi man describes the sameright of appropriation between the *matekila* clans of Naombekwa in Namotomoto, and Lasakau in Namoli, and thinks "it must be due to women; a long time ago a woman of Naombekwa went to Namoli."

In Mba the people appear to have nothing so formal as the *matekila*, and it is not certain how far the word is part of their vocabulary. However, their definition is valuable: Ananayasa of Kumbuya suggests *veitavale*ni (cross-cousins) as equivalent of *matekila* and explains that if a woman of Tio marries into Vitongo, her daughter, who is sister's child (*vasu*) to Tio, marries back into Tio, has issue, and so the two tribes go on intermarrying, and are *veimatekila*.

Our western experience teaches us, therefore, that a clan may be selected as envoys to a tribe because they intermarry with that tribe.

Let us apply this clue to the Lakemba facts. Here is the list of the clans of Tumbou, where reside the nobility, and the various islands to which they are envoys—

| | | |
|---|----------------|----------------|
| Naivi to Ono, Ongea, Vatoa ; | } Vuanirewa. { | } Katumbalevu. |
| Matailakemba to Namuka ; | | |
| Vatuwangga to Vulanga and Modhe ; | | |
| Koroidhumu to Oneata ; | | |
| Katumbalevu proper to Dhidhia ; | | |
| Dheyekena to Komo ; | | |
| Tanggalevu, or Tumbou proper, to Kambara. | | |

All these islands are subject to Lakemba. Envoys to other places are arbitrarily chosen, except the envoys to Mbau, who are appointed from among the heralds (*mata ni vanua*) of the clan of Narewandamu.

The first four clans constitute the nobility and are of common origin with the fifth. The second and third are eligible to the high chieftainship.

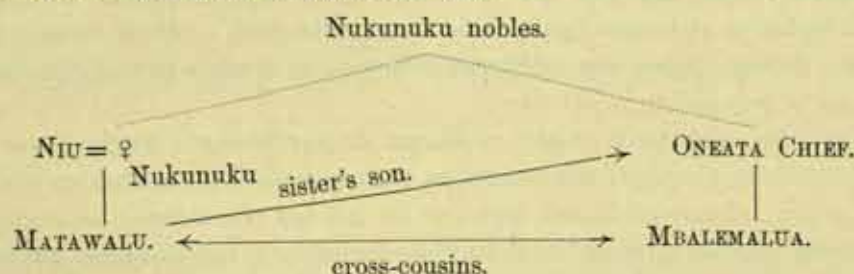
¹ The Nandronga *h* = Mbauan *s*.

People of quality had so many wives from so many different islands that a genealogy might justify an envoyship to one place as well as another. But the intermarriage of Naivi with Ono seems most decidedly preponderant, and we must count under the same heading all intermarriages between Naivi and Wadhiwadhi in Lakemba, for Ono being a colony of Wadhiwadhi, anyone related to the second is also related to the first. I must ask the reader to take these facts upon trust as I have not the complete pedigrees to hand. Nayadha and his mother's brother challenged each other; in the consequent siege Nayadha at once conquered Ono and protected it, as sister's son, against further harm; that was no doubt the foundation of their envoyship. Tshutshua (Joshua) of Naivi, however, appears to have no connection by marriage with Ono and looks upon Nggalinggali in Kambara as his peculiar place, by reason of a female ancestor from that place, Ndranivia's wife, if I remember well.

Vatoa belongs to Ono.

Koroidhumu's case seems plain: Matawalu's mother came from Nukunuku, and the Oneata chiefs come from Nukunuku in Lakemba; a sister's son (*vasu*) to Nukunuku is therefore sister's son to Oneata. In point of fact Matawalu once saved Oneata from the aggression of his own people, "because," says Sakaraia, Lord of Oneata, "Matawalu and Mbaletalua (chief of Oneata) were cross-cousins."

The following diagram will illustrate this:—



Sakaraia also said that Tuimereke (by birth of Vatuwangga; by adoption of Naivi) would be sent as envoy to Oneata, because his mother was a lady of that place.

Tanggalevu marries a good deal with Kambara. One informant says they are one family. Kambara men also declared that "the ladies¹ are the cause of our coming: in course of time they (Tanggalevu) were appointed envoys to Kambara."

The evidence is meagre, but considering that most of these appointments are fairly recent, dating from a time when intertribal suspicion was weakened, and when no one of these islands would have disregarded any Lekemban envoy, whoever he might be, we must be thankful that we have found any envoyships based upon intermarriage at all.

Within the island of Lakemba there are no envoys, but there exist similar though less formal and more personal connections. The expression used for the Tumbou xenos of the Lakemba village is that he is a "native" (*itaukei*) in that village. If we ask what noblemen are "native" in Wadhiwadhi, they will answer

¹ i.e., of one place married into the other.

that anyone whose mother comes from Ono is "native" in Wadhiwadhi. Salesi is xenos of Yandrana through his grandfather's mother; his influence is predominant there, and if the Yandrana folk have any request to proffer to the High Chief, they will address themselves to Salesi, who will introduce them at the "Great House."¹ It is thus but another form of the sister's sonship (*vasu*) and envoyship.

Akeai of Matuku says that "of old the islands of Moala and Matuku held no intercourse²; if a man of one island went to the other, he was clubbed; but there were relationships between them. . . . If I wished to hold a ceremonial exchange (*solevu*), I saw my kinsmen of Moala and informed them first; if they approved, it was done." Even at the present day a Fijian is not fond of travelling to places where he has no relatives. Melaia thinks it is useful to know one's mother's pedigree, as visiting a place a man will thus know whose house to stay at, and thinks her son takes no interest in his mother's relatives because he is not given to travel.

I have it on record that the chief of Namosi being at war with the tribe of Korolevu³ sent them a young nobleman whose mother was of Korolevu, with offers of peace.

We are safe in concluding that the same theory holds good of eastern as of western envoys; a man is sent to his mother's kinsmen because he is safe among them and because he is sure, in virtue of the sister's son's irresistible right (*vasu*), to obtain what he asks for. This usefulness of the sister's son may in turn have reacted upon his right and helped it to the extreme pitch to which it has attained in Fiji. Subject tribes especially would have to cultivate a person who could at any time be required to shield them.

That the evidence is scanty need not be wondered at; no great event has accompanied the growth of this institution, such as marked the setting up of chiefs; it has grown imperceptibly, and therefore no one has remembered its origin once intercourse between tribe and tribe had become general; and this same intercourse makes it hopeless to prove by genealogies a greater number of marriages of envoys with their corresponding tribe than of other clans.

Once the pattern was set, arbitrary copies could be made, and persons appointed envoys at the will of the chief. The Mbauan envoys to Dhakaundrove, Lakemba, Naitasiri, are selected among the heralds who were certainly not connected with those places before their lords. The same applies to the Lakemba envoys to Mbau. Naivi is envoy to Ongea because Tailiai gave that island to a nobleman of Naivi who bailed out his canoe in a storm. In Naitasiri the envoys to Mbau are the first clan to have visited Mbau and secured, not for themselves, but for their lords, a Mbauan wife.

These new formations (all are new that are known to me) were doubtless promoted by the increasing pomp and dignity of the nobility, who came to look upon the duties of envoy as more suited to the heralds than to themselves.

¹ *I.e.*, the chief's house.

² This is an example of the Fijian way of expressing as absolute a qualified statement. The sequel shows there was intercourse, only it was not a daily event, an enterprise without special reason.

³ Now in Serua, south coast.

THE INITIATION CEREMONY FOR BOYS AMONG THE YAO OF NYASALAND.

[WITH PLATE III.]

BY H. S. STANNUS, M.D. (LOND.), AND J. B. DAVEY, M.B. (LOND.).

FROM time to time various and incomplete accounts of these ceremonies have appeared in anthropological journals and a few books, but one of us (J. B. D.) having recently had the opportunity of witnessing part of such a ceremony and of taking a number of photographs illustrating some of its chief features, we think it worth while to place on record an account which we believe to be fairly complete.

Our remarks refer to Yao settled in the valley of the Upper Shiré and Zomba district, and it will be understood that minor differences occur in these observances as practised among other sections of the Yao people. Some form of initiation ceremony is commonly found among the majority of tribes of Central Africa but whereas among some this rite is postponed until puberty or marriageable age is attained, the Yao carry it out between the ages of seven and eleven years for both boys and girls.

These first ceremonies may be regarded as the opening chapter in the tribal life of the individual, a life every event of which is marked by the performance of some rite.

The word *unyago* is a collective term including the ceremony for girls, that for boys, and a third which is undergone at the time of first conception of the wife. Each has its distinctive name, *Chiputu*, *Lupanda*, and *Litiwo* respectively; it is with *Lupanda* we propose now to deal.

At the present time there is a tendency for the rite to be performed at an earlier and earlier age so that the youths may benefit by the instruction given at *unyago* before they come under mission influence and lose the ties of tribal custom.

Every year a certain number of boys in any group of villages reach the age at which the ceremony is commonly performed. In response to representations made by the village headmen, the chief appoints a time at which the *unyago* shall be held; this is usually towards the end of the dry season but while the unburnt "bush" still may afford the necessary privacy.

The boys, each accompanied by his *nkamusi*, or "guardian," an elder brother, an uncle or some friend who volunteers for the service, meet at the *bwalo* or open space, where business and all ceremonies and dances take place, of the chief's

village. Here they are received by the chief and are anointed by him as they file by with *nsembe*, millet flour used as an offering or sacrifice specially prepared by the chief's head wife.

In the evening they leave the village for the place appointed as *Lupanda*, accompanied by the operating medicine-man, *m'michira*, that is he who carries the tail, *uchira*, he carries the tail of a zebra, and their guardians.

At *Lupanda* huts have already been built to receive them and a large collection of foodstuffs has been prepared by the mothers of the boys about to be initiated. The night is spent by the friends and relations, who come thus far, in dancing.

A common expression used in speaking to the boys, *wali* (singular *mwali*), as they are now called, is "Ah, now you will be given *usomba*!" (honey made by the humble-bee, which is very sweet), referring in sarcastic terms to the hardships the boy is about to undergo.

The following morning early the *wali* leave *Lupanda* with the *m'michira*, each with his *nkamusi*, and go to a chosen spot further in the bush called *Ndagala* where so-called circumcision is performed on each boy by the *m'michira* without delay.

The operation properly consists in making a nick through the free margin of the prepuce just to the right side of the middle line near the frenum, but since the introduction of Muhammedanism more or less complete circumcision may be performed.

The instrument, *chisondo*, used is of sharpened iron and a dressing of charcoal and oil is applied to the wound. During their stay at *Ndagala* the *wali* are housed in long grass sheds without partitions but with a separate door for each boy opposite his appointed sleeping-place.

They wear a piece of bark-cloth, *liwondo*, round the loins over which is worn a kind of kilt of frilled-out bark, *magajawisa*, or of palm leaves, *majenga*. Posted in the bush a little way from the encampment are some of the boys' "friends," *alombwe* (plural *alombwe*), to act as sentinels and warn off would be intruders; they are armed with sticks, etc. The mothers of the *wali*, who bring food each day, call from a distance "*Alombwe! Ndute!*" ("*Alombwe!* things brought," from *ku-tuta!* to bring); answer is made "*Atututire Tulye!*"

After healing of the circumcision wound food may be brought cooked; before this the boy cooks for himself. The time spent at *Ndagala* varies from four to six weeks to three months, the longer time sometimes being necessary for complete healing to take place. During this period rigorous discipline is maintained; the day commencing with bathing in a stream whither the *wali* are driven before sunrise. Time is spent in receiving instruction in the arts, the making of baskets, mats, traps, etc., in learning the methods of agriculture, in becoming proficient in wrestling and dancing, in being taught native custom as applied to married life and in their relations with their fellows and an exacting code of etiquette to be observed to their elders, etc., while they are kept up late into the night hearing stories of their tribal history.

Certain restrictions as to diet are made, generally in connection with the

mythical origin of such food substances. A finger-shaped yam called *lipeta* (plural *mapeta*; Mang'anja *chicheche*) is tabu, as it is said to have first sprung from the grave of a leper, the inference being obvious; after the *unyago* the boys have to undergo a special doctoring before they can partake of them.

Bananas and rice are similarly refused them; the latter on account of a story to the effect that rice first grew from the nostrils of a dead man, the idea doubtless having relation to the resemblance of rice grains to maggots. Fish is by some debarred, as fish is said to have taken origin from the diaper of a woman which she threw away while bathing.

Each *m'michira* may have special observances of his own. One near Zomba causes cassava to be roasted a particular way. Rows of pieces of cassava are placed in split bamboos and so roasted before a fire as they do fishes. If roasted in the ordinary way the cassava would split and show the white floury material inside, signified by the verb *ku-lagala*. If eaten, it will cause the preputial wound to re-open. Should any one of the *wali* die, no one is informed until the end of the ceremonies.

When the course of instruction is at an end and the circumcision wounds all completely healed, the chief is informed and he appoints a day for return to *Lupanda*. Here the huts which were previously built are repaired and much food and beer is made ready and thither all the people from the villages go to welcome back the youths.

The *wali* are marched in, still wearing bark cloth, and quietly go to the mats spread out for them to sit upon. Later, while the boys sleep in their huts, dancing goes on all night. Dances may be performed by bands of trained dancers such as *kuchimula*. A big bonfire called *chirangali* is made near the *Lupanda* and deeds of daring are performed by the young men by jumping or actually walking over it.

An essential part of the ceremony, consisting in the exhibition to the *wali* of representations of animals and other things, has been reserved until this reunion at *Lupanda*.

These representations are made by the *m'michira* of mounds of earth outlined in flour. The *wali* are taken to see them on the last day at *Lupanda*.

The word *Lupanda* refers to a post which has been put in the earth (*ku-panda*, to plant) to indicate the appointed place. The post is made of any kind of wood and round it are planted smaller branches with their twigs and leaves on.

The animal bas-reliefs are made near the *Lupanda*. Certain animals and other subjects are always depicted; others vary, they are collectively known as the *inyago*, a word corresponding to the Mang'anja *zinyao*. First of all the *wali* are shown *namungumi*, the whale, of which the *m'michira* sings—

"*Namungumi atundumira eh eh!*

Namungumi atundumira eh eh!

Kwa kwa kwa kwa!"

("The whale showed his back above the surface of the water.")

The whale is probably familiar to Yao living close to the Indian Ocean, but it figures also in Mang'anja ceremonies and has been copied by them from the former probably.

Next in order is shown *Nyasa* or *Nyasa ja litanda*, the water of a big pool or lake as opposed to *Nyasa ja mpango*, which means a river.

The subject is, of course, Lake Nyasa or Lake Chilwa; the cup-shaped depressions represent the deep holes found in the lakes. No water is ever introduced. The exhibition is again accompanied by a song—

“*Kwende kalole Nyasa Amkubechi, amao!*”
 (“Come and see the Lake Amkubechi, Mother!”)

The third item is called *chingunda-ngunda*, and consists of a mound of earth, (*ku-unda* or *-unga*, to heap up) and adjoining portion on the flat, well shown in the photograph. This always occupies a position of distinction near the *Lupanda* post. It is spoken of as *katumbe ka ngongole*, “the little hill of debt,” indicating a kind of abstract idea signifying that everyone owes a debt to his *unyago*, a debt to his ancestors and to his progeny.

Mbunda (the zebra), *mbunju* (the eland), the hyæna, the sable antelope, and the elephant are also commonly figured. The object of this demonstration is not clear; it has been supposed to be an object lesson in natural history but we are inclined to the more interesting explanation, namely, that these objects have a totemistic significance, though all references to such seem lost in the past.

The last night before the *wali* leave *Lupanda* they undergo a ceremonial bathing, some woman friend volunteers for the service in each case. The woman carries the boy on her back to the stream; there they each pour water over the other, both remaining covered by their usual garments. She then carries him back and anoints him with oil and puts bead bracelets and necklace on him. This woman is afterwards for ever to be treated as an elder sister.

The following morning the *wali* appear in calico or new bark cloth, wearing their beads and their hair oiled; each carries a wand about 5 feet long, *nongo*, with a pattern burned into the shaft and two rattles, *masewe*, fixed at one end.

Besides these each boy wears a head band of bark, *icala*, or of beads, *litawala*, and down the back hangs a string to which is attached a tassel, *lilombola* (plural *malombola*) or *nkokoliko*, or sometimes *angwaye*, a recently introduced name for the same thing; the words indicate a thing which dangles down and keeps hitting the body.

Thus arrayed, with the *m'michira* in front and led by one of the *wali* chosen for the purpose by the chief and called *nachilongola* (*ku-longolo*, to go in front), they are marched to the chief's village followed by the band of dancers giving the chorus to the songs and the crowd of villagers dancing and singing, yelling and firing guns (in the old days), while the women trill with their tongues, *ku-luluta*.

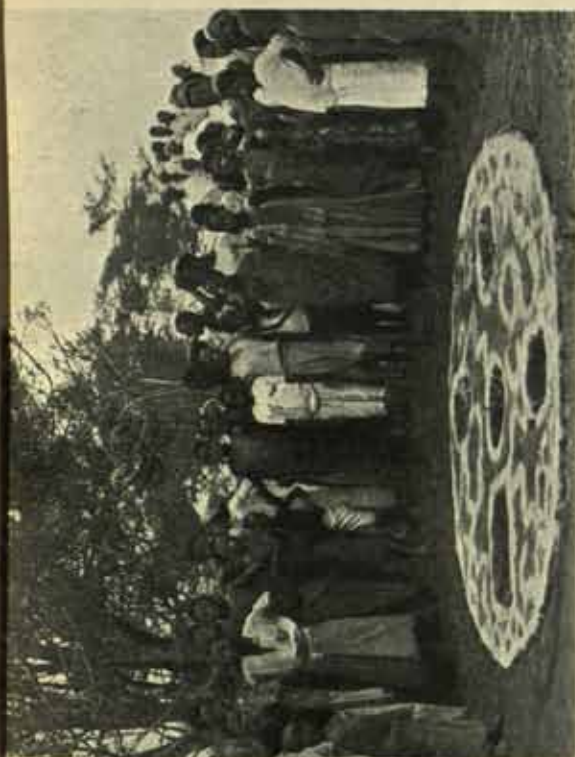


FIG. 2.—SYASA.



FIG. 4.—THE ZEBRA.
THE INITIATION CEREMONY FOR BOYS AMONG THE YAKS OF KACHHAR.

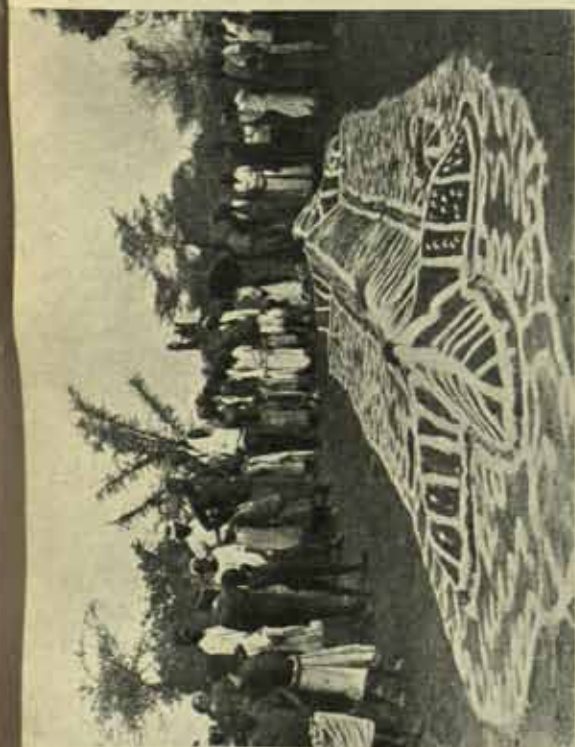


FIG. 1.—THE WHALE.



FIG. 3.—CHINOUNDA-NGUNDA.
THE INITIATION CEREMONY FOR BOYS AMONG THE YAKS OF KACHHAR.

Among the songs sung a favourite at *Lupanda* is—

"*Chakulia mandanda mchileche panopano,*"
(“Stop eating eggs here”),

and

"*Mwera mwera msunje wa imanga cha kwina njete mchileche.*"
(“You have drunk flour water, you must stop stealing salt.”)

They are then offered flour and water to drink.
On the way back to the village they sing—

"*Kusi kwangala ngunda sewerechi wana ngunda!*"
(“The pigeons have young ones, they are flying round and round!”)

In the order above mentioned they reach the village and having walked round the chief's enclosure they line up and sing—

"*Kuchi komo augele, kuchi komo augele, atati kwandola, atati-kwandola.*"
(Chorus) *Kusoira kwa kupita.*"

(“The gate is shut, father come and fetch us.
(Chorus) There is no place for me to pass through.”)

This is their prayer to be set free. The chief comes out and measures the line of boys in calico, this is paid to the *m'michira* for their redemption. The *wali* then sit on new sleeping mats prepared for them while the chief calls upon some of them to exhibit their skill in drumming or dancing, etc. After which they go quietly to the boys' dormitory to sleep.

At the time they are anointed with oil by the women, the boys are given new names by their “guardians,” often their own names; henceforth their children's name must not be used; they are no longer children and have to behave quietly and with decorum, with due respect to their elders, and observe the many laws of etiquette.

The special garb above mentioned is worn for two weeks, after which it is handed over to their mothers. The wands are kept only for three days, after which the “guardians” come and take them and in company with their *wali* go to the bush and there break them in a forked tree and leave the broken pieces under the tree.

A PRELIMINARY STUDY OF THE NAMAU LANGUAGE, PURARI DELTA, PAPUA.

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THE following notes on the Namau language have been made to facilitate an ethnical study of the tribes of Namau at a future date and they must not be accepted as a serious and exhaustive treatise on the language of these tribes.

Namau is geographically located at the head of the Gulf of Papua. It is better known to the civilized world as the Purari delta. The geographical distribution of the language, however, reaches beyond the delta. The Muru tribe living on the east boundary of the Purari River, also the Kaura tribes occupying the land on the east bank of the Purari River, are acquainted with this language and speak it with comparative ease when necessary. It is doubtful if the Kaura-tribes living away from the east bank of the Purari River and nearer to the west bank of the Vailala River are acquainted with this language. Whereas on the west bank of the Purari River, in the hill country just above Bevan's Rapids, the Namau language is spoken as purely as it is by the delta tribes. These people are also named Kaura and said to be kin of the Kaura tribes living on the strip of land between the Purari River and the Vailala River.

Further research will probably prove that the tribes speaking the Namau language, as the delta tribes speak it, on the west bank of the upper waters of the Purari River, were originally delta natives, probably Korikian, and for their own safety had reason to get away from the delta to make a home among the Kaura people and, according to the custom of these people when it is desirable to allow their past to pass into oblivion, took the name of the Kaura people.

The foregoing reference to the geographical distribution of this language would be devoid of significance if it did not set forth two conflicting facts.

Continuous residence among these tribes has enabled me to observe their keenness to learn other languages and they do so with marked success; on the other hand, it is evident that in their dealings with the Muru tribe (probably a split from the Kaura tribe) and the Kaura tribe, they must have persisted in the use of their own language until those tribes acquired, at least, a conversational knowledge of it.

Further, it is interesting to note here that this language is remarkably free from introduced words; also that these tribes have preserved their territorial name "Namau." This fact is all the more remarkable when it is remembered that

the Motuans have visited these tribes from time immemorial and have not, as elsewhere in the Gulf of Papua, succeeded in introducing a Motuan name for this district.

The word *namau* is in daily use, and in addition to being used as the name of the delta it signifies "indifference, heedlessness," and when preceded by the word *keaporo*, as *keaporo namau*, it means "deaf."

It is interesting to note that this language is spoken by all the tribes of this delta; its dialectic variations are so few that they need no comment, or place, in this paper. The Vaimuru tribe living in Era Bay; the Kaimare tribe on the east of the Pie River; the Iai tribe, an inland tribe near the east boundary of the delta, use occasional words not in general use in this language; in other respects the language is intact.

ELEMENTARY SOUNDS IN THE NAMAU LANGUAGE.

Vowel sounds are very much in evidence in this language and that fact may possibly account for the meagreness of consonants in its vocabulary.

The five vowels seem to preserve their respective sounds, as given below, and no case is known to me when a duplicated vowel is so placed in a word as to give the "oo" sound in "good," or the "ee" sound in "feel." Whenever duplication of vowels, as above, takes place each vowel takes its distinctive vowel sound. To preserve this peculiarity in my translation work I write the vowels in this way, a'a, e'e, i'i, o'o, u'u, and thus, in writing, the accentuation of vowels so carefully observed by the people of Namau is rendered easy.

Vowel Sounds.

"a" has the sound of "a" in father in words of one or two syllables, but when a word becomes elongated by inflexions, or by inset syllables, it loses fullness of sound but so slightly that it is difficult to find an "a" sound to illustrate it.

| | | |
|-----|------------------|---------------|
| "e" | has the sound of | "a" in fate. |
| "i" | " | "e" in eve. |
| "o" | " | "o" in over. |
| "u" | " | "u" in usurp. |

The only exception, known to me, to the above usage of accentuating a duplicated vowel is illustrated whenever the particle "ai," denoting locality, or time, follows a word having as its final letter "a." At such times the "a" of "ai" may be dropped and the "i" joined to the preceding word as: *marea ai*, at the house, becomes *mareai*. I sometimes think that there are indications of a similar change now taking place in the duplication of the vowel "i." Up to the present I have only noticed it when the possessive particle is being suffixed, but so tenacious is the native in his endeavour to preserve and accentuate each vowel that

when information is sought on this matter he persists in demanding the duplication of this particular vowel.

It may be concluded from the foregoing that this language has no double vowels with a distinct sound as such and as common to so many languages.

Compound Vowel Sounds.

"a'a," "a'e" are invariably written thus because each vowel has its distinct sound.

"ai" in any position in a word has the sound of the English "i."

"ao" is a rare combination but when heard stress always seems to be put on the "a," the "o" having merely a vibratory sound.

"au" as a combination is often heard and has the sound of "ow" in how, but there seems to be some uncertainty respecting that usage in the native mind, hence the above combination, also "a'u" as in *a'uri*, a pig, and *auri*, which has the same meaning. When the former form is used both "a" and "u" take their respective vowel sounds.

"aw" has the sound of "au" in autocrat. There is, undoubtedly, confusion in the native mind concerning the sound of this combination and "oi," which has the sound of "oi" in voice. This seeming confusion may be due to the very general practice of the Naman natives to duplicate final vowels of a word when they wish to emphasize the word.

"ea." When "a" follows "e" it may take its full sound, and it usually does so when it precedes a consonant, or the vowels "u" and "o," but when "ea" are followed by "i" the "a" unites with the "i" and forms the "ai" sound already noted.

"ei." When these vowels come together it is usual to give to them the "ay" sound in "hay" as *eiai*, to cut. An exception is found when the same word is used as a dative particle; as such both "e" and "i" take their respective vowel sounds and the "ai" sound is preserved.

"ia." These vowels together, or with other vowels, retain their respective vowel sounds with the exception that when "i" is followed by "a" the "i" loses its "i" sound and takes the sound of "y" in year.

"oi." These vowels together form the sound of "oi" in the English word voice, but when "o" is followed by any other vowel both it and the other vowel take their respective vowel sounds. Any other combination of vowels seems to follow the general rule of giving to each vowel its respective vowel sound.

Consonants.

The following are the only consonants in general use in this language:—

"k" having the sound of "ca" in carpet.

"l" " " " " "la" in lava.

"m" " " " " "mu" in music.

| | | |
|-----|---------------------|----------------|
| "n" | having the sound of | "nu" in nude. |
| "p" | " | "p" in pies. |
| "r" | " | "ro" in rover. |
| "v" | " | "vy" in bevy. |

"t" is found in words having totemic significance but is never used in every-day conversation.

It will be recognized that the consonants are modified in sound by the vowels which precede, or follow, them, but in every case either as the initial letter of a word or as intermediate letters in a word they are initiative both in position and sound as they determine the syllable and give it its particular sound.

The following peculiarities must be remembered.

"k" almost invariably has "a" before it when it is an intermediate letter. There are exceptions, as *kikila*, a sago slug, but these are rare.

"l" and "r" seem to be interchangeable; "v" and "m" seem to be used erratically. At times I have noticed an effort to convert "v" into "b." I duly recognize the possibility to confuse letter sounds; I have been, at times, painfully aware of the inability of the native to discern letter-sound values; at all times I have avoided getting information from the native when he is under the influence of betel-chewing, hence I regard the foregoing note on the consonants, their sounds and the peculiarities of usage in this language as being, in the main, correct.

Accent.

I confess my inability to state concisely any rules that will give a clue to the method of accentuation pursued in this language. If what has been said concerning vowel-sounds be remembered it becomes fairly easy to settle the matter of accent but I become daily appalled by a seeming indifference, on the part of the natives, to regard any rule or order of accentuation if they can save trouble of accurate expression by so doing.

It must not be assumed that the native is indifferent to the value of accentuation; my concern is that he is so emphatic in this detail when he speaks correctly, but when I listen to his conversation with his own people and hope to catch the correct accentuation he invariably so contracts words and sentences that I cannot get much help from this, the best possible source.

Bearing in mind what has been said about the vowels, the native tendency to lengthen the last vowel of a word, the native desire to give each vowel its own sound, apart from the exceptions noted above, the whole matter of accentuation resolves itself into the number of syllables in a word.

Words of one syllable may be pronounced sharply, as *mau*, small, or as *mau'u*, having the same meaning.

Words of two syllables take the accent on the last syllable, as do words of three syllables.

Words of four syllables may take the accent on the third syllable, as *enaváka*, had gone, or on the last syllable, as *enavaká*, will go at any time, as distinguished from "I will go at the time understood."

Roots and Derivatives.

Root-words are much in evidence in this language and it would be very interesting work, when the vocabulary of the language is completed, to classify such words, not merely to determine verb-roots, adjective-roots, and noun-roots, but chiefly with the hope of getting an insight into the minds of the ancestors of this people. Taking as a root-word the word *kau*, a knot, we get a primary derivative *kaupu*, a company of people, and by suffixing the reflexive sign *kiai* we get the word *kaupukiai*, to assemble, also by dropping the final vowel "a" we get the word *kaupukia*, an assembly.

It is a temptation to multiply illustrations of the foregoing, and if it fell in with the object of this paper I should be able to note resemblances in the word-formation of this language akin to many words known to me in the Toaripi language; suffice it to say in passing that, notwithstanding the two languages are totally unlike in grammatical structure, still there are many marked etymological resemblances, and these resemblances cannot be due to intercourse between the Ipi and Namau peoples during many generations.

Number and Case.

To express the idea of number it is most general to use words which apart mean "many," "few," "crowd," "company." An exception is noticed when the dual and third person plural of pronouns are used—

| | | | | |
|--------------------|-----|-----|-----|---------------------------|
| <i>A'a aruru</i> | ... | ... | ... | a multitude. |
| <i>A'a aila</i> | ... | ... | ... | many men. |
| <i>A'a ailapeo</i> | ... | ... | ... | few men, or not many men. |
| <i>A'a-oro</i> | ... | ... | ... | men. |
| <i>A'a orere</i> | ... | ... | ... | the two men. |
| <i>A'a kaupū</i> | ... | ... | ... | a company of men. |

This phrase is used when it is necessary to convey the idea that there are other men gathered together in companies.

Cases have been determined satisfactorily apart from the ablative. A word in the nominative case undergoes no change as such, but when it becomes a genitive the word may be slightly modified, or it may retain its original form in the nominative case, and the genitive particle be suffixed to it.

The genitive particle may be *nu*, or it may be *anu*; it is invariably *inu* when it is suffixed to a word whose last vowel is "i."

It has already been remarked that the Namau people duplicate a vowel wherever they can, but often when using the genitive the sense of euphony seems to embarrass them and there is an apparent effort to follow their usual custom of duplicating the final vowel of the word, whereas it will not always yield to it.

As an illustration I have—

| | | | | |
|-------------|----------------|-----|-----|---------------|
| Nominative. | <i>Marea</i> | ... | ... | House, |
| Genitive. | <i>Mareanu</i> | ... | ... | Of the house, |

but there is also the word *Ukia* as nominative and the sentence *Ukia'ane ukua*, *Ukia's boy*. There is something similar in the use of the word *pa'iri*—

| | | | | |
|-------------|-----------------|-----|-----|-----------------|
| Nominative. | <i>Pa'iri</i> | ... | ... | Village, |
| Genitive. | <i>Pa'irinu</i> | ... | ... | Of the village, |

but we also find that when the word *Purari* is used as nominative it always takes as its genitive *Purari'inu*, of the *Purari*.

The dative is indicated by the particle *eiai*, which always follows its noun or pronoun.

The accusative case is fragmentary and it is necessary to be well acquainted with the language to know where it is used, or when it is determined by its position solely in the sentence, *i.e.*, many words undergo no change in formation, they are in the nominative case, or in the accusative case, according to the structure of the sentence. In general practice the word in the accusative case immediately precedes its verb. There are many exceptions to the above practice, how many I cannot yet determine, which have been thoroughly tested, and these, in every instance, are either found in the verb-prefixes "aw" and "o," or in the particle *oi*. I have recently found another, but it must stand over until it has been duly tested.

When "aw," "o," "oi," are found as prefixes to a verb, or are insets between a verb and its auxiliary, if the word in the accusative case be a pronoun the following changes are made in the word to indicate the accusative case.

The word *awkuai* is the infinitive form of the verb "to give." It undergoes the following changes to express the accusative case:—

| | | | | |
|----------------|-----|-----|-----|---------------------|
| <i>ikuna</i> | ... | ... | ... | gives me. |
| <i>nikuna</i> | ... | ... | ... | gives you. |
| <i>awkuana</i> | ... | ... | ... | gives him. |
| <i>akuna</i> | ... | ... | ... | gives us. |
| <i>nakuna</i> | ... | ... | ... | gives you (plural). |
| <i>ekuna</i> | ... | ... | ... | gives them. |

"o" and "oi" undergo the same changes, and the accusative case is thus expressed in both voices and each mood and tense of the verb.

The vocative is expressed by "e" following the word in that case, but it is also greatly aided by vocal expression and stress put on it.

The ablative gives me some concern as it is difficult to be sure if I have really found it, or whether I am compromising a postposition to meet the need. We use *mere*, from, as *pa'iri mere anena*, has come from the village. In daily use "e" expresses "by," but I am not satisfied that it really means "by" only, solely.

Gender is unknown in this language; an object is either a man or a woman. Trees, birds, fishes, everything is thus spoken of and the native seems to be very accurate in determining the sex of a tree. All trees are male or female, and he is shrewd enough to speak of the best trees as males.

Comparative and Superlative.

I have not recognized any words that can be regarded as comparatives or superlatives when standing apart from other words. There is, however, no difficulty in expressing either comparative or superlative, as there seems to be a redundancy of complimentary words in the language.

The following illustrates how comparatives and superlatives are formed, and will give an idea of the variety of words called into use according to the character of the particular positive in mind, or expressed:—

| | | | |
|-------------------------|-----|-----|---|
| <i>kaia-ira</i> | ... | ... | tomahawk. |
| <i>kaia-ira-mau</i> | ... | ... | half-axe. |
| <i>kaia-ira-mai</i> | ... | ... | an axe. |
| <i>ima</i> | ... | ... | good. |
| <i>ima mikio</i> | ... | ... | very good, or truly good. |
| <i>ima mai</i> | ... | ... | best; the greatest possible good. |
| <i>mukua</i> | ... | ... | high. |
| <i>mukua miki</i> | ... | ... | higher, or truly higher. |
| <i>epe'epe</i> | ... | ... | highest. |
| <i>vapara</i> | ... | ... | beautiful. |
| <i>vapara ima mikio</i> | ... | ... | more beautiful, or truly good, beautiful. |
| <i>vapara mai</i> | ... | ... | most beautiful. |

It will be observed that it is not easy to illustrate the comparatives and superlatives of the Naman language in good English, but I have experienced no great difficulty in expressing our English comparatives and superlatives in this language.

I reluctantly forego the pleasure of giving more illustrations to avoid making these notes too long, but I hope to return to the subject of this paper and shall then note in detail the suggestiveness of the expletives used in this language; I am inclined to think that in them the student will find a strong clue to the genius of the language.

Numerals.

There are only five numerals and these are expressed thus—

| | | | | |
|----------------------|-----|-----|-----|--------|
| <i>monou</i> | ... | ... | ... | one. |
| <i>rere</i> | ... | ... | ... | two. |
| <i>rere kaiane</i> | ... | ... | ... | three. |
| <i>morere-morere</i> | ... | ... | ... | four. |
| <i>kaupu</i> | ... | ... | ... | five. |

I am unable to find any method by which the Namau people count above five. They do not seem to go beyond the fingers of the left hand, and, notwithstanding the above numerals are in daily use, it is rarely that two natives will count them in the same way.

If the native begins with the little finger of the left hand he will call it *monou*, one, but he may add to it the next finger and call them *morere*, two or he may say they are "two."

The third finger he names *kai*; *ane* is the conjunction "and," hence *rere kaiane* means little finger and the fourth are two fingers and *kai* added to them they become three fingers.

Morere-morere suggests that these natives are inclined to think in pairs or couples; they certainly do group the fingers into two pairs when they wish to illustrate what they mean by "four." Taking it that they count thus, *morere*, one pair, *morere-morere*, another pair. The *mo* is in frequent use and means "another," "more." *Kaupu*, five, *i.e.*, a collection or company, *i.e.*, the fingers of the clenched hand.

Nouns.

The note having reference to number, case, and gender states, in the main, all that needs to be said in these particulars in respect to nouns. In the matter of number it has to be added that the plural of nouns is expressed by adding to the noun, intact, the third person plural pronoun. This may be done by adding the pronoun in its complete form, as *a'a-oro*, men, or *a'ero*, women. The latter order of eliding the "o" is not common, whereas the "oro" as added to "a'a" is very general.

It must not be thought that the native is very particular in this matter, he seems very indifferent to numbers.

Many nouns are derived from verb-roots, but many more seem to be related to noun-roots. I am often surprised to note the number of words derived from a common-root and give here an illustration.

Assuming *epe* to be the root of the verb *epesi*, to win, we get the following words:—

| | | | | |
|---------------|-----|-----|-----|----------------------------|
| <i>epca</i> | ... | ... | ... | rows, lines. |
| <i>e'epai</i> | ... | ... | ... | to place in rows. |
| <i>ep'epe</i> | ... | ... | ... | highest, above all others. |
| <i>epiai</i> | ... | ... | ... | to pass by. |

Adjectives.

There is no rule for the place of the adjective in a sentence. It may precede or follow its noun. It seems to be the most adaptable part of speech in the language. With the aid of the auxiliary *liai* it becomes an active verb; if *keia* be suffixed to it, it becomes a passive verb. With slight terminal vowel changes it becomes an adverb, and it may be so expressed to emphasize or diminish the importance of the noun it qualifies.

Pronouns.

The usual classification of pronouns observed in most languages will be appended to these notes. It will be fairly exhaustive, but the student will recognize that the second person singular and the first person plural are defective in that, both in spelling and pronunciation, they are alike when used objectively and subjectively.

Probably there is no part of speech in this language which gets such erratic treatment as do the pronouns. They may be expressed, or they may be merely implied; they may be, under circumstances noted above, prefixed to a verb, be placed as an inset into a verb, or be ignored.

An irregularity will also be noticed in the possessive pronouns. The suffix "nu," which seems to hold good for all nouns, becomes "na" when suffixed to the third person singular personal pronoun, whereas the first person plural of the personal pronoun undergoes no change to indicate it as being a possessive.

Personal Pronouns.

Nai, I.*Ni*, Thou.*U*, He.*Enei*, We.*Noro*, You.*Oro*, They.*Duals.**Enere*, We two.*Norere*, You two.*Orere*, They two.

Possessive Pronouns.

Na, My.*Ni*, Thy.

Una, His. Or, *unu*, when following word having "u" as final letter; or, "u" when preceding its noun in a sentence.

Ene, Ours.*Nomo*, Yours.*Omo*, Theirs.

Distributive Pronouns.

Monou-monou, Each.*Karakava*, Every.*Mo*, Another, more.*Varomo*, Some.

Demonstrative Pronouns.

Ei, eire, this; *ei a'a*, this man; or, *a'a eire*, this man.
Ou, iure, that; *ou a'a*, that man; or, *a'a iure*, that man.
Oure, that, distant; *oure oure*, that very distant.

Interrogative Pronouns.

Koana, Who?
Oiana, What?
Ekará'ana, Which?
Ekara pani ai, When?
Ekeiana, Where?
Kono ana, Whose? e.g., *kono ina ana*, whose pipe?
Ouana? Is that it?

Eka'ana, also *eka'anu*, are used often in preference to *ekeiana*, when it is desired to know whether a person, or thing, is near or distant.

It will probably be ascertained that a "reflexive" pronoun is in use in this language. The term *nane* is often used to express the idea "self," but I am unable to say that it is consistently used with a personal pronoun.

It is doubtful if the relative pronoun is expressed in this language. The nearest approach to a relative pronoun is found in the term *orau*, "as."

There are two terms, *au*, *ua*, undoubtedly expressing "it," but I am unable to place them because they seem to be used erratically; to be used when not expected, omitted when they seem most necessary. The former is always used when having reference to food only; the latter may be used of people or things, but another particle is used when reference is made to articles being moved from place to place. This particle *mi*, like *ua*, is always prefixed to a verb.

The Verb.

Verbs in this language may be classified as below, *i.e.*, into three distinct classes. There is a large number of verbs which may be regarded as distinctively "causative" verbs; on the other hand, an equally large number of verbs when suffixed with the "causative" particle become causative verbs, so that I am in doubt if it is correct to regard "causative" verb as a distinct class.

I have the same hesitancy in respect to "auxiliary" verbs. The "auxiliary" undergoes all the mood and tense changes, whereas the word, usually an adjective, it verbalizes undergoes no change. I hesitate to speak of an "interrogative" class of verbs, strictly speaking such a class does not exist; on the other hand, it is impossible to think and speak in the Namau language without being convinced that in the matter of inflection the verbs when used interrogatively should be regarded as distinct in tense formation.

Verbs Classified.

1. Transitive verbs usually terminating in *vai* or *okavai*.
2. Intransitive verbs invariably terminating in *ai*.
3. Reflexive verbs terminating in *kiai*.

Verbs Sub-classified.

1. Auxiliary verbs known by the auxiliary *liai*, to do, *okavai*.
2. Causative verbs known by the suffix *eai*, to cause, create.
3. Interrogative verbs, *i.e.*, any verb used interrogatively and by being so used it has so many inflectional changes that it loses the tense semblance of ordinary verbs.

Irregular Verbs.

It is inadvisable to express an opinion on the number of irregular verbs in this language, *i.e.*, I am unable, with my present knowledge, to determine if they are few or many; those I am acquainted with and recognize in daily use are limited to verbs whose stem is "aw," or "oi," or "o." There is another class which has come to my notice very recently but until I can test it very carefully it must remain unwritten.

There is an interesting etymological feature to be observed in connection with these irregular verbs. The term *avioiai* when split into parts gives *avi*, holy; *oiai*, stand erect. The complete term gives the word "to worship," but when a native prays to God he uses this expression: "*enei avi'ni'na*," written "*avinina*," we worship thee.

An illustration under "Cases" has been given of the accusative changes which take place in irregular verbs whose first syllable is "aw." The same changes are observed with certain verbs, not all, beginning with "oi" or "o."

Transitive verbs may, or may not, affect the final syllable of the verb stem when undergoing tense changes.

Intransitive verbs always drop the final syllable prior to taking tense modifications.

The *kiai* of reflexive verbs seems to be very akin to the auxiliary *liai*, and like the latter does not change the stem to which it is attached but takes all the tenses after dropping its final syllable "ai" unless the passive *keia*, or the future *kana*, is to be suffixed when it retains its "a."

Irregularities observed in many of the verbs of this language seem to be determined by the presence of the following particles, either as a prefix or as an infix of the verbs:—

- "aw," *avkuai*, to give; "aw," *avkiai*, to tell;
- "oi," *inamu-oiai*, to see; *kep'o'ai*, to praise;
- "o," *okavai*, the auxiliary used to render a verb transitive.

These particles only undergo change, and thus render the verb irregular, when the verb governs the personal pronouns. This holds good in every case with the exception of the third person singular of the personal pronoun, *e.g.*,

| | | | |
|--------------------|-----|-----|--------------|
| <i>Nai avokuna</i> | ... | ... | I give him. |
| <i>Nai nikuna</i> | ... | ... | I give you. |
| <i>Nai okuna</i> | ... | ... | I give them. |
| <i>Ikune</i> | ... | ... | Give me. |

See note on Accusative Case.

| | | | |
|---------------------|-----|-----|--------------------------|
| <i>Nai kepoina</i> | ... | ... | I praise him. |
| <i>Nai keponina</i> | ... | ... | I praise you (singular). |
| <i>Nai keponana</i> | ... | ... | I praise you (plural). |

Following the illustration given in the note on the accusative case no difficulty is experienced in remembering the irregularities of verbs having the above particles.

The verbs "to go," "to come," are also irregular when used interrogatively, and the illustration of the regular verb expressed interrogatively is no guide to the formation of these two verbs.

Enavai, "to go," when expressed interrogatively becomes—

| | | | | |
|----------------|--------------------|-----|-----|--------------|
| Present Tense. | <i>Amenai?</i> | ... | ... | Do you go? |
| Past Tense. | <i>Amenave?</i> | ... | ... | Did you go? |
| Future Tense. | <i>Amenavakai?</i> | ... | ... | Will you go? |

Aneai, "to come," becomes interrogatively—

| | | | | |
|----------------|-------------------|-----|-----|----------------|
| Present Tense. | <i>Ama'ane?</i> | ... | ... | Have you come? |
| Past Tense. | <i>Amane?</i> | ... | ... | Did you come? |
| Future Tense. | <i>Amaneakai?</i> | ... | ... | Will you come? |

When these questions receive an affirmative reply the emphatic forms of present, past and future tenses are used. If the reply be negative the emphatic of the present tense becomes—

A-enanakea, I do not go.

The perfect of the past tense becomes *enakape*, I did not go.

Future tense becomes *enapea*, I will not go.

Aneai undergoes similar changes when used affirmatively or negatively.

All verbs undergo slight changes when used in calling or shouting to a person some distance away.

Thus, when saying farewell to a person the term used is *enavu*, but if two people are leaving the farewell becomes *enalavu*, and when three or more people are leaving the word *enavamu* is invariably used.

The "mu" of *enavamu* seems to be suffixed to all verbs when shouting or calling to people, and the negative "peo" with nouns, "pe" and "pea" with verbs, becomes *peaku* when a negative reply is shouted back.

To avoid making these notes cumbersome I leave for future notice irregularities associated with compound verbs and those words I regard as "fugitive forms" of the potential mood.

The Regular Verb used Interrogatively.

The Naman language is easy and adequate for translating purposes but very difficult and, seemingly, involved when used conversationally. The latter fact is due to the complicated changes which are made to convey the idea of interrogation.

I give an illustration, possibly the simplest illustration of these changes, but it must be noted here that the following illustration merely touches the fringe of interrogative formations—

| | | | | |
|----------------|-----------------------|-----|-----|-----------------|
| Present Tense. | <i>Ama-kikiri'e?</i> | ... | ... | Do you write? |
| | <i>Kikirinake</i> | ... | ... | I do write. |
| Past Tense. | <i>Ama-kikiri'i?</i> | ... | ... | Did you write? |
| | <i>Kikirikile</i> | ... | ... | I did write. |
| | <i>Kikirimake'i?</i> | ... | ... | Was he writing? |
| | <i>Kikirimakeiale</i> | ... | ... | He was writing. |
| Future Tense. | <i>Ama-kikirimao?</i> | ... | ... | Will he write? |
| | <i>Kikiriaka</i> | ... | ... | He will write. |

The above may be regarded as correct, *i.e.*, regular and reliable. A vast number remains to be permanently fixed, but my present knowledge of them, and my anxiety lest I wrongly interpret them, preclude the advisability of including them in this paper.

It may be noted here that the particle *ama* prefixed to a verb indicates that the verb is being used interrogatively. Further, when I am competent to fix permanently the exact usages of the interrogatives with verbs it will be noticed that "ma" of *ama* generally finds a place as an infix. This reference to *ama* is interesting and necessary because *ana* is the correct termination of the interrogatives when used alone or apart from verbs—

E.g., *koana*, who? *oiana*, what? *ekeiana*, where?

but these when used before a verb change to *koama kuru e?* who says so?
oima kuru e? what do you say?

The Regular Verb used as a Causative.

The sign of the causative is the particle suffixed to a verb after the verb has dropped its final syllable. This particle *eai* undergoes the tense changes in the active voice, but when used in the passive voice it drops its last vowel only, is joined to the verb, and the passive form takes all the tense changes.

Conjugation of Verb "to be."

Keia.

Indicative Mood.

Tense—Indefinite, Progressive, Emphatic.

| | | | | |
|----------|-----------------|-----|-----|--------------|
| Present. | <i>Keina</i> | ... | ... | Am. |
| Past. | <i>Ke'inave</i> | ... | ... | Was. |
| Future. | <i>Keiakana</i> | ... | ... | Will, shall. |

Imperative Mood.

| | | | |
|------------------|-----|-----|--------------|
| <i>Keine</i> | ... | ... | Be. |
| <i>Keinamoki</i> | ... | ... | Let it be. |
| <i>Keinamaki</i> | ... | ... | Let us be. |
| <i>Keinameki</i> | ... | ... | Let them be. |

Infinitive Mood.

Keia.

Conditional.

| | | | |
|-----------------|-----|-----|------------|
| <i>Keia'ane</i> | ... | ... | If (I) be. |
|-----------------|-----|-----|------------|

Note.—*Keia*, the verb "to be," is used with its tense changes to express the passive voice. When used as a suffix to a verb to express the passive voice, or when used as the verb "to be," like all verbs it is preceded by the personal pronouns, singular and plural, but has no change of formation other than the tense changes, *e.g.*,

| | | | |
|------------------|-----|-----|-----------|
| <i>Nai keina</i> | ... | ... | I am, |
| <i>Ni keina</i> | ... | ... | Thou art, |
| <i>U keina</i> | ... | ... | He is, |

illustrate the order observed in the use of all the verbs in the Namau language. Verbal prefixes and suffixes express tense, are adverbial or prepositional, render the verb interrogative or causative, negative or affirmative.

Note.—There is a verb *keiai*, "lie down," which might be confused with the verb "to be" *keia*, as it undergoes the same changes (tense) as the verb "to be" but the context determines which meaning is being expressed.

Keia is often prefixed by "ua" as *uakeina*, it is there, it rests there, and suggests that it is a prefix to the verb *keiai*, but neither context nor the usual form of verbal tense changes permits such an interpretation, as it is quite common to hear *uakeia* when *uakeina* would be the more correct. It may, however, be regarded as an alternative form. I wish to leave this matter open for further research.

Note.—The verb "to be" is never found as an auxiliary between a verb and its personal pronoun. It is either used alone, as the verb "to be," or as a suffix, modified by tense changes, to a verb to indicate that the passive voice is being expressed.

*A Paradigm of a Regular Verb.*Active Voice:—verb *kikiriai*, to write.

Indicative Mood.

Present Tense.

| | | | | | |
|--------------|---------------------------|-----|-----|-----|-----------------------|
| Indefinite | <i>Kikirina</i> | ... | ... | ... | I write. ¹ |
| Imperfect | <i>Kikirimakina</i> | ... | ... | ... | I am writing. |
| Perfect | <i>Kikiriane-euna</i> | ... | ... | ... | I have written. |
| " continuous | <i>Kikiriane-eumakina</i> | ... | ... | ... | I have been writing. |
| Emphatic | <i>Kikirinake</i> | ... | ... | ... | I do write. |

Past Tense.

| | | | | | |
|--------------|--------------------------|-----|-----|-----|----------------------------------|
| Indefinite | <i>Kikirinave</i> | ... | ... | ... | I wrote. |
| Imperfect | <i>Kikirimakei'inave</i> | ... | ... | ... | I was writing. |
| Perfect | <i>Kikiriaka</i> | ... | ... | ... | I had written. |
| " historical | <i>Kikiria-kaiaka</i> | ... | ... | ... | Only used as above in narrative. |
| Emphatic | <i>Kikiriakile</i> | ... | ... | ... | I did write. |

Future Tense.

| | | | | | |
|--------------|-------------------------------|-----|-----|-----|----------------------------|
| Indefinite | <i>Kikiriakana</i> | ... | ... | ... | I shall write. |
| Imperfect | <i>Kikirimakeiakana</i> | ... | ... | ... | I shall be writing. |
| Perfect | <i>Kikiriane-euakana</i> | ... | ... | ... | I shall have written. |
| " continuous | <i>Kikiriane-eumakeiakana</i> | ... | ... | ... | I shall have been writing. |
| Emphatic | <i>Kikiriaka</i> | ... | ... | ... | I shall certainly write. |

Imperative Mood.

| | | | | | |
|-----------|---------------------|-----|-----|-----|---------------------|
| Command | <i>Kikiriaia</i> | ... | ... | ... | Write, write down. |
| | <i>Kikirine</i> | ... | ... | ... | Write, write here. |
| | <i>Kikirira</i> | ... | ... | ... | Write, write there. |
| Entreaty. | <i>Kikirinamiki</i> | ... | ... | ... | Let me write. |
| | <i>Kikirinamoki</i> | ... | ... | ... | Let him write. |
| | <i>Kikirinamaki</i> | ... | ... | ... | Let us write. |
| | <i>Kikirinameki</i> | ... | ... | ... | Let them write. |

Note.—The natives of Namau seem to have well-defined ideas on the propriety of using the imperative mood. A boy speaking to his chief, or any native speaking to God in the form of prayer, always studiously avoids using the imperative mood,

Regular verbs undergo no change other than mood and tense changes. Pronouns, singular and plural, precede the verb, they are intact and expressed apart from the verb when used in the nominative case.

whereas in speaking to another boy he invariably uses it. When a native, for reasons he will not state, wishes to avoid the use of this mood he falls back on the infinitive mood.

Note.—The intentional form of the verb is expressed in the—

| | | | | |
|----------------|-------------------------------|-----|-----|----------------------------|
| Present Tense. | <i>Kikiriai okamakina</i> | ... | ... | I am going to write. |
| Past Tense. | <i>Kikiriai okamakei'ina</i> | ... | ... | I was going to write. |
| Future Tense. | <i>Kikiriai okamakeiakana</i> | ... | ... | I shall be going to write. |

Conditional Mood.

Present Tense—Singular and Plural.

| | | | | |
|--------------|-------------------------------|-----|-----|-------------------------|
| Indefinite. | <i>Kikiriane</i> | ... | ... | If I write. |
| Progressive. | <i>Kikirimakeia'ane</i> | ... | ... | If I am writing. |
| Intentional. | <i>Kikiriai-okamakeia'ane</i> | ... | ... | If I am about to write. |

Past Tense.

| | | | | |
|--------------|------------------------------|-----|-----|-------------------------------|
| Indefinite. | <i>Kikirinave-ane</i> | .. | ... | If I wrote. |
| Progressive | <i>Kikirimakei'inave-ane</i> | ... | ... | If I was writing. |
| Emphatic. | <i>Kikiriaka-livilia</i> | ... | ... | If I had written (I did not). |
| Progressive. | <i>Kikirimakeivilia</i> | ... | ... | If I had been writing. |

Note.—It will be seen that the conditional mood is by no means complete. Omissions are wittingly made until I can verify forms I have obtained as the result of questioning. Such forms are rarely reliable until they have been well tested in print and in casual conversation.

Potential Mood.

I have found only one form which may be regarded to express "may," "might." When connected with the verb to write it is expressed thus—

Kikiriane-iai ... That I may write,
e.g., Nai raure mi-anea nai revareva kikiriane-iai,
 I a slate bring (that) I may write.

The term *naca*, possibly, is often used after a verb, future tense, to express the English "may,"

e.g., Lai liakana naca, it may rain.

Infinitive Mood.

I am only able, at present, to fix one term as infinitive in the sense it is usually used and found in most grammars—

Kikiriai ... To write.

Participles.

The forms noted above as "progressive" take the place and have the usual significance of participles in other languages.

Note.—Regular verbs in the active voice very often take the adverb of locality as a prefix as *ipokoina*, he abides there, or *epokoina*, he abides here. The adverb of time is also used by suffixing the particle *ne* if the verb supplies an "a" to precede it, otherwise the particle *ane* is suffixed, *nai kikiriane*, when I write.

The passive voice is conjugated with the moods and tenses of *keia*, the verb "to be." This form is suffixed to the verb, active voice, after slight modifications have been made to its final letters. The tense and mood changes are expressed by the changes made in the passive form, e.g., *kikirina*, I write, becomes *kikiriakeina*, I am written. It will be observed that "k" is most frequently preceded by "a."

Adverbs.

Adverbs are adjectives used adverbially, generally speaking, in this language, and very few adjectives undergo any change in formation when used adverbially. Such changes as are noticed are illustrated below—

ima, good, becomes *imai*, well.

roko, *rokoa*, energetic, becomes *rokoroko*, quickly.

The adverbial particle *ane* is in very general use and expresses the idea of a particular time, or "when," as *nai kuruaka'ane* reads "when I had said." It is heard in all the tenses, but in the present and future tenses it gives the verbs the same sound as the conditional mood has, so that the context alone can indicate if the adverb "when" or the conditional "if" is being used.

This particle *ane* when reduplicated as *aneane* means "until." When this reduplicated form precedes a verb the tense inflection of the verb it qualifies gives place to the particle *ane* as *nai pokoiakana aneane ni vairuane*, I shall stay until you return.

The adverb *enaena*, until, is also in frequent use, but it in no way affects the formation of the verbs with which it is associated.

The locative particle *ai* is not quite as characteristic of the adverb as it is of the preposition, but a brief glance at the illustration herein given will show that this particle *ai* in connection with the adverbs cannot be ignored—

| | | | | |
|----------------------|-----|-----|-----|-----------------------|
| <i>eai</i> | ... | ... | ... | now, to-day; |
| <i>namai</i> | ... | ... | ... | yesterday, to-morrow; |
| <i>eu ai</i> | ... | ... | ... | here; |
| <i>iou ai</i> | ... | ... | ... | there; |
| <i>ei ane mekai</i> | ... | ... | ... | hither; |
| <i>iou ane mekai</i> | ... | ... | ... | thither; |
| <i>panipani ai</i> | ... | ... | ... | always; |
| <i>maura</i> | ... | ... | ... | presently; |
| <i>pinai</i> | ... | ... | ... | firstly; |
| <i>ipi'ipia</i> | ... | ... | ... | equally; |
| <i>lia</i> | ... | ... | ... | yes; |
| <i>peo</i> | ... | ... | ... | no; |

| | | | | |
|--------------|-----|-----|-----|-----------------------------|
| <i>naea</i> | ... | ... | ... | possibly; |
| <i>orau</i> | ... | ... | ... | thus, to do a thing "thus"; |
| <i>erau</i> | ... | ... | ... | thus, to speak "thus"; |
| <i>lioku</i> | ... | ... | ... | habitually; |
| <i>re</i> | ... | ... | ... | very. |

Postpositions.

The locative particle *ai*, referred to above, is as consistently used with words having reference to time as with words referring to place—

| | | | | |
|-------------------------------------|-----|-----|-----|------------------------------|
| <i>ai</i> | ... | ... | ... | at, a place, the time; |
| <i>mekai</i> | ... | ... | ... | by, by the side of; |
| <i>kiripai</i> | ... | ... | ... | with, together with; |
| <i>laru ai</i> | ... | ... | ... | in; |
| <i>iki ai</i> | ... | ... | ... | out; |
| <i>mokono ai...</i> | ... | ... | ... | in, in the palm of the hand; |
| <i>okono avao ai</i> | ... | ... | ... | amongst; |
| <i>upai</i> | ... | ... | ... | above; |
| <i>arau ai</i> | ... | ... | ... | below; |
| <i>arekamu ai</i> | ... | ... | ... | near; |
| <i>amai</i> | ... | ... | ... | far; |
| <i>paku ai</i> | ... | ... | ... | before; |
| <i>neko ai</i> | ... | ... | ... | behind; |
| <i>mere</i> , as <i>mapani mere</i> | ... | ... | ... | from early morning. |

These words and phrases follow the noun or pronoun to which they refer.

"In," "out," "down," "up," "across" are expressed by verbs and compound verbs as *ikiri-mane*, come in. *Ikiri* is from *ikiriai*, to enter, *mane* is from *manei*, to come across.

Elemane is from *eleai*, to go out, and *mane* is the same as just noted—

| | | |
|------------------|--------------------------|---------------------|
| "To go down" | is expressed by the verb | <i>re'ai</i> ; |
| "to go inland" | " | " " <i>inuai</i> ; |
| "to go up" | " | " " <i>inavai</i> ; |
| "to go across" | " | " " <i>keai</i> ; |
| "to come across" | " | " " <i>manei</i> . |

The foregoing by no means exhaust the Namau vocabulary of its compound verbs; the language is redundant with them and is thus rendered comprehensive in the expression of ideas.

Conjunctions.

| | | | | | | | | |
|------------|-----|------------|-----|------|--------------|-----|-----|----------|
| <i>ane</i> | ... | ... | ... | and; | <i>awku</i> | ... | ... | also; |
| <i>a</i> | ... | ... | ... | but; | <i>overe</i> | ... | ... | both; |
| | | <i>uku</i> | ... | ... | ... | ... | ... | because. |

Interjections.

Aua, an exclamation of pain or of delight, but always of surprise.

Ai, an emphatic denial of a matter so emphatic that when a person uses

it as an exclamation, as far as that person is concerned the last word on that matter has been said.

I have not noticed any great number of exclamations. The word *eua* which means, "it may be true, but who knows?" is sometimes heard.

In closing these notes on the Namau language I cannot refrain from an expression of regret that I have neither time nor space to give a comparative list of words to show their wide geographical distribution over Papua and extending to Polynesia. I shall hope, however, to continue my study of these words, enlarge the present list, and when my knowledge of the Namau language becomes more complete I will revise these notes that the best obtained of this language may be preserved.

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THREE TRIBES OF WESTERN AUSTRALIA.

[WITH PLATE IV.]

BY A. R. BROWN.

IN the year 1910 I was elected to the Anthony Wilkin Studentship in Ethnology founded at Cambridge University in memory of the late Anthony Wilkin, whose early death was a great loss to the science to which he had devoted himself. Under the terms of that studentship I undertook certain investigations among the aborigines of Australia. Additional funds for the purpose of these researches were provided by Mr. S. P. Mackay of Victoria and Western Australia, by Sir John Murray, and by the Royal Society. During some part of my investigations I had the help of Mrs. D. M. Bates, who has for some years been studying the aborigines of Western Australia on behalf of the West Australian Government. The services of Mrs. Bates were generously placed at my disposal by the Government. The results of my investigations and those of Mrs. Bates in the same field will be published in due course. A part of the results of my own researches are published in the present paper. The information which is contained therein was all obtained in 1911 during a journey through the country of the tribes referred to.

THE KARIERA TRIBE.

The Kariera tribe occupies the coast of Western Australia from a point to the east of the Sherlock River to a point east of Port Hedland, extending inland for about 50 miles. The tribe is adjoined by the Ngarla on the east, the Ngaluma on the west, the Injibandi on the south, and the Namal on the south-east. No meaning has been discovered for the name Kariera, by which members of the tribe are spoken of by themselves and by their neighbours.

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The Kariera tribe is one of the tribes referred to in a pamphlet by Mr. J. G. Withnell entitled "The Customs and Traditions of the Aboriginal Natives of North-Western Australia," published at Roebourne, 1901. The name of the tribe is spelt *Kyreara*. The same tribe is referred to under the name *Kaierra*, by Dr. E. Clement in "Ethnographical Notes on the Western-Australian Aborigines," *Internationales Archiv für Ethnographie*, Band XVI, Heft I and II, 1903. I have found the statements of Dr. Clement, except where they repeat the information

given by Mr. Withnell, to be careless and inaccurate. The name of the tribe is given as *Karriarra* in a pamphlet entitled "Aborigines of North-West Australia," by "Yabaroo," Perth, West Australia, 1899.

Present Condition and Numbers.

At the present day the natives of the Kariera tribe are nearly all living on the sheep stations that have been established in their tribal territory. They are fed and clothed by the station owners or at the expense of the Government, and the able-bodied men and women work on the stations. Their country has been

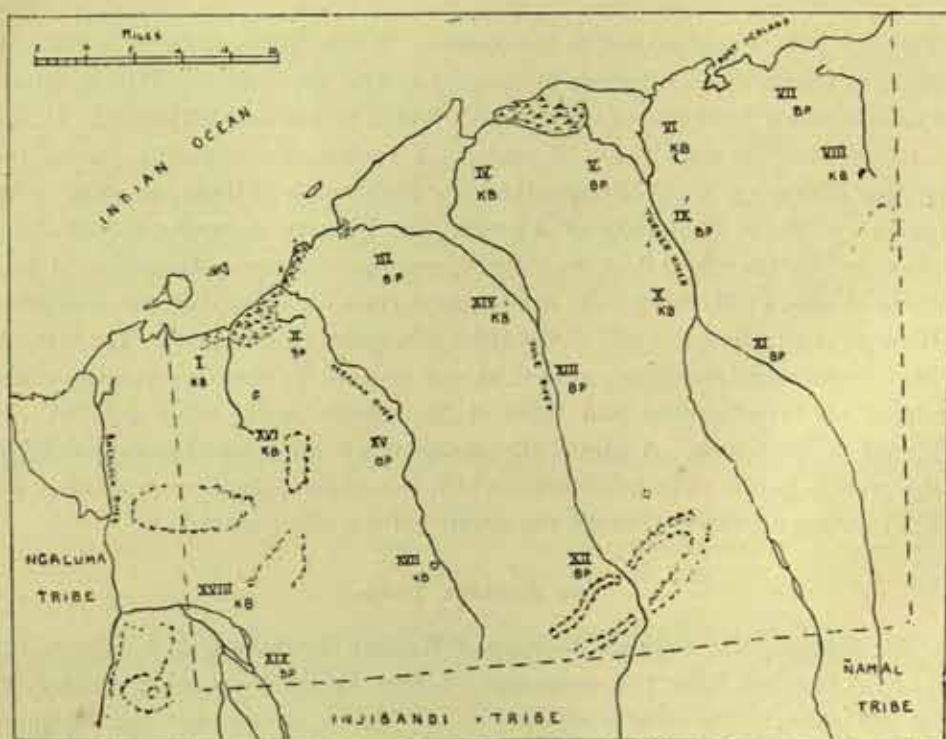


FIG. 1.—MAP OF THE KARIERA TRIBE.

occupied by the whites for about fifty years, and during that time their numbers have steadily decreased. At the present time there are not more than 100 all told, men, women, and children. My own estimate would put their present number at between eighty and ninety. All of them, except the oldest, can speak fairly good English.

Tribal and Local Organization.

The tribe is distinguished from its neighbours by the possession of a name, a language and a defined territory. There is no tribal chief, nor any form of tribal government. The fights that formerly took place were not wars of one tribe with

another, but of one part of one tribe with one part of another, or at times of one part of a tribe with another part of the same tribe. Thus there was no unity of the tribe in warfare.

The extent of the territory of the tribe is between 3,500 and 4,000 square miles. The boundaries are shown approximately on the accompanying map. The northern part is mostly level plain covered with grass and scrub with occasional hills of no great height. In the south, there are numerous stony hills with intervening flats. The coast is low and consists chiefly of sand-dunes and mangrove swamps. There are three main rivers or water-courses, the Turner, the Yule and the Peeawah. These so-called rivers only run after heavy rains, but, during most of the year, water is to be found in the river beds in pools or soaks. Many of these pools were formerly permanent and contained fresh water fish. Since the country has been stocked with sheep, some of the formerly permanent pools now dry up in the summer.

The natives have a very large number of geographical names. Many of these, if not all, have a meaning that is understood at the present day. An interesting feature, and one often leading to confusion, is that there are often two different places with the same name. Thus, there are two places called Murumbarina, one on the Turner River, and one on the Sherlock River. *Murumbari* is the name of a species of beetle, which is common, it seems, in these two places. Every geographical feature, every little hill or pool or creek has its name. There are a few names that seem to be the names of districts, but there is a good deal of uncertainty in their application. A very large proportion of local names end in the syllable *-na*, as in the above example, while others end in *-adina* or *-indina*.

The tribe is divided into a number of local groups, each with its own defined territory. Membership of the local group is determined by descent in the male line; that is to say, a child belongs to the local group of its father and inherits hunting rights over the territory of that group. There are no distinctive names for the local groups. To the question "Where is your country?" (*Wanja nyinda ngura* ?), a native replies by naming one of the more prominent camping places of his local group, or in some cases the place where he was born. On the accompanying map of the Kariara tribe I have, therefore, indicated the different local groups by means of Roman numerals. The map is not complete; that is to say, it does not show all the local groups formerly existing, but only those about which I was able to obtain reliable information by means of genealogies. I found out very little about the southern part of the tribal territory.

In default of an actual survey, it is impossible to do more than give a rough estimate of the extent of the territory belonging to each local group. Along the coast there are seven local groups, occupying altogether a strip of land about 80 miles long and a little less than 10 miles wide. This gives the area occupied by each as about 100 square miles or a little more. The inland local groups seemed to me to occupy each a somewhat larger country, between 150 and 200 square miles. This is what we might expect, since the coast natives have both the land

and the sea from which to obtain their food-supply. As a rough estimate, therefore, but the best that our knowledge permits, we may suppose that the tribe consisted of between twenty and twenty-five local groups. It is impossible at this time to obtain any accurate information as to the former volume of the local groups, that is the number of individuals belonging to each. My own estimate is that each group contained not less than 30 individuals, giving the minimum for the tribe at about 750 with a density of about .2 per square mile. This, however, is a very rough estimate, and no reliance must be placed upon it.

The country of a local group, with all its products, animal, vegetable, and mineral, belongs to the members of the group in common. Any member has the right to hunt over the country of his group at all times. He may not, however, hunt over the country of any other local group without the permission of the owners. A single exception to this rule seems to have existed where a man was following a kangaroo or emu and it crossed the boundary into the country of his neighbours, when he might follow it and kill it. Hunting, or collecting vegetable products on the country of another local group constitutes an act of trespass and was in former times liable to be punished by death. The importance attached to this law seems to have been so great that offences against it were very rare. In the early days of the settlement of the whites in the country of this and neighbouring tribes, the squatters made use of the natives as shepherds, and I have been told on several occasions that they found it at first impossible to persuade a native to shepherd the sheep anywhere except on his own country. I could not find any evidence of the individual ownership of any part of the soil or any of its products. The whole territory of the group and everything on it seem to belong equally to all the members of the group.

It is impossible for a man to leave his local group and become naturalized or adopted in another. Just as the country belonged to him, so he belonged to it. If he left it he became a stranger, either the guest or the enemy of the men in whose country he found himself. He might pay visits to other groups, and such visits were apparently of very frequent occurrence, but his "home" was his own country, the country of his father and his father's father. At the present day the influence of white settlement has altered all this. The country now belongs to the white men and the natives have to live where they can. But even now the attachment of a man to his own country has not been destroyed. Natives often express a wish to die and be buried in their own inherited hunting ground.

In their original condition of life the natives never stayed long in one place. They shifted from one camping ground to another perpetually. It does not seem that the whole local group always lived and moved about as one body. A single family, that is a man and his wife or wives and their children, often travelled and hunted by themselves. A single individual, or a family, or several families, might pay a visit to a neighbouring group, during which time they hunted in the country of their hosts. When some particular article of food became very plentiful in the

country of one group they invited their neighbours to come and stay with them. Thus the inland natives visited those on the coast when fish was plentiful. On the occasion of the performance of a ceremony, members of different local groups might be found camped together often for weeks at a time. There was thus a perpetual shifting to and fro both within the country of the group and from one group to another.

This state of things shows very clearly that the unit of social life in the Kariëra tribe was the family, consisting of a man and his wife or wives and their children. Such a unit might move about by itself without reference to the movements of the other families of the local group. In the camp each family had its own hut or shelter with its own fire. The family had its own food supply which was cooked and consumed by the family. The man provided the flesh food and his wife provided the vegetable food and such things as small mammals or lizards.

A native camp is composed of two parts, the married people's camp and the bachelors' camp. The latter contains all the unmarried men, including widowers; unmarried women and widows live with one or other of the families of the married people. If a visitor comes to the camp and brings his wife with him, he puts his fire and shelter near the married people, on the same side as his own country lies. If he is unmarried, or if he has not brought his wife with him, he goes to the bachelors' camp.

It will be shown later that a man is not permitted to marry a woman of his own local group. The result of this was that in the camp of a local group would be found only men and unmarried women and children who belonged to the group by birth, the married women all belonging by birth to other groups. A woman seems to have retained a sort of right over the country of her birth, so that a man and his wife were generally welcome to visit the wife's local group whenever they wished. A man seems also to have a sort of secondary right over the country of his mother, that is the country to which she belonged by birth. In a large number of cases this was the same as the country of his wife. In both cases, however, it seems to have meant no more than that a man was sure of a welcome in the country of his wife or his mother.

Relationship and Marriage.

The Kariëra tribe is divided into four parts that I shall speak of as *classes*. The names of these are Banaka, Burung, Palyeri, and Karimera. No meanings were found for these names. To the natives of the present day they are simply the names of social divisions, and have no further meanings. These classes regulate the marriages of the natives. A man of any given class is restricted in his choice of a wife to one of the other classes. Thus a Banaka man may only marry a Burung woman and a Burung man may only marry a Banaka woman. The two classes, Banaka and Burung, thus form what will be spoken of as an

intermarrying pair or simply a *pair*. This does not imply that a Banaka man may marry *any* Burung woman, but only that he may not marry a woman of any other class. The child of a Banaka man and a Burung woman is neither Banaka nor Burung but Palyeri, while the child of a Burung man and a Banaka woman is Karimera. The rules of marriage and descent of the Kariëra tribe are shown in the following table:—

| Father. | Mother. | Child. |
|-----------|-----------|-----------|
| Banaka. | Burung. | Palyeri. |
| Burung. | Banaka. | Karimera. |
| Palyeri. | Karimera. | Banaka. |
| Karimera. | Palyeri. | Burung. |

This may be expressed more concisely by means of a diagram.



The sign = connects the two classes of an intermarrying pair, and therefore shows the relation of husband and wife. The sign) connects the class of a mother with the class of her child. I propose to speak of the classes so related as together forming a *cycle*. In the Kariëra tribe Banaka and Karimera form one cycle and Burung and Palyeri the other. The children of a woman always belong to the same cycle as herself, but to the other class of the cycle. The sign / connects the class of a father with the class of his child. I propose to speak of the two classes so connected as together forming a *couple*. In the Kariëra tribe Banaka and Palyeri form one couple and Karimera and Burung form the other. The children of a man always belong to the same couple as himself, but to the other class of the couple. There are no names in the Kariëra tribe for the cycles, couples, or pairs.

This class system can only be understood by a study of the system of reckoning the relationships of consanguinity and affinity. The following is a list of the terms used to denote these relationships. M. stands for "Male speaking," F. for "Female speaking," and M.F. for "Male or Female speaking":—

Maali.—Father's father M.F., father's father's brother M.F., mother's mother's brother M.F., consort's mother's father M.F., son's son and daughter M.

Kabali.—Father's mother M.F., father's mother's sister M.F., mother's father's sister M.F., consort's mother's mother M.F., son's son and daughter F.

- Tami*.—Mother's father M.F., mother's father's brother M.F., father's mother's brother M.F., consort's father's father M.F., daughter's son and daughter M.
- Kandari*.—Mother's mother M.F., mother's mother's sister M.F., father's father's sister M.F., consort's father's mother M.F., daughter's son and daughter F.
- Mama*.—Father M.F., father's brother M.F., mother's sister's husband M.F., consort's mother's brother M.F.
- Nganga*.—Mother M.F., mother's sister M.F., father's brother's wife M.F., consort's father's sister M.F.
- Kaga*.—Mother's brother M.F., father's sister's husband M.F., consort's father M.F.
- Toa or Yumani*.—Father's sister M., mother's brother's wife M., wife's mother M., brother's son F., daughter's husband F., husband's sister's son F.
- Furo*.—Father's sister F., mother's brother's wife F., husband's mother F.
- Kaja*.—Older brother M.F., father's brother's son and mother's sister's son if older than the speaker.
- Turdu*.—Older sister M.F., father's brother's daughter and mother's sister's daughter if older than the speaker.
- Margara*.—Younger brother M.F., father's brother's son and mother's sister's son if younger than the speaker.
- Mari*.—Younger sister M.F., father's brother's or mother's sister's daughter if younger than the speaker.
- Nuba*.—Mother's brother's daughter M., father's sister's daughter M., mother's brother's son F., father's sister's son F., wife M., husband F., brother's wife M., wife's sister M., sister's husband F., husband's brother F.
- Kumbali*.—Mother's brother's son M., father's sister's son M., sister's husband M., wife's brother M.
- Bungali*.—Mother's brother's daughter F., father's sister's daughter F., brother's wife F., husband's sister F.
- Maiŋga*.—Son M.F., brother's son M., sister's son F.
- Kundal*.—Daughter M.F., brother's daughter M., sister's daughter F.
- Kuling or Yaraia*.—Sister's son M., daughter's husband M.
- Ngaraia or Bali*.—Sister's daughter M., son's wife M.
- Ngaraia*.—Brother's daughter F., son's wife F.
- Nguranu*.—Wife M. (specific).
- Yarungu*.—Brother's wife M.

As shown in the above list, each term is applied to a number of different relatives. Only some of those to whom the term is applied are mentioned in the list. Thus the term *mama* is also applied to a mother's brother's wife's brother, to a sister's husband's mother's brother and to many other relatives. The list of relatives denoted by any one term could be extended indefinitely.

At the same time each of the terms in the above list is used by the natives in a sense corresponding to our own use in English of the terms "father," "mother," etc. Thus, although a given person applies the name *mama* to a large number of individuals, if he is asked "Who is your *mama*?" he immediately replies by giving the name of his actual father, unless his own father died during his infancy, in which case he gives the name of his foster father. In the same way, if asked for his *maeli* he gives the name of his own father's father, although there are a number of other men to whom he applies the same term. Each term, therefore, has, what we may call, a primary or specific meaning. The primary meaning of *mama* is "father," and that of *maeli* "father's father." The primary meaning of the native term corresponds very closely to our own use of relationship terms in English. In West Australia I collected a large number of genealogies, and in questioning the natives I always used the native terms of relationship in their primary meanings. I never experienced any difficulty except in such cases as the one I have mentioned, where the name of a foster parent was substituted for that of the true parent.

In English we use the one word "cousin" to denote a number of persons standing in different relations to the one person. We distinguish between near and distant cousins, and have developed a somewhat complicated terminology to denote these distinctions. Just as we use the word "cousin" so the Kariëra native uses his word *mama* (father), speaking of a large number of different related persons by the one name, but distinguishing in thought, though not in words, those of his "fathers" who are more nearly related to him from those who are more distantly related. In the modern blackfellow English he speaks of his "close-up" and his "far-away" "fathers." The same is the case with every other term of relationship. With regard to the term for "father," a man's nearest relative of this kind is not necessarily the man who gave him birth, but the man under whose care he lived as a child. This is, of course, his own physiological father in most cases, and in cases where the real father dies the child is, in most cases, adopted by a brother of the father. This distinction between nearer and more distant relatives of the same kind (that is, denoted by the same term) is of the greatest importance in the social life of the Kariëra tribe. It seems probable that it is equally important in other tribes of Australia, though I do not know that it has been specifically pointed out by previous writers.

Although the use of the terms of relationship is based on actual relations of consanguinity and affinity, it is so extended as to embrace all persons who come into social contact with one another. If we take any single member of the tribe, then every person with whom he has any social dealings whatever stands to him in one or other of the relations denoted by the terms in use and may be addressed by that term. In this way the whole society forms a body of relatives. In the Kariëra tribe, a man or woman never addresses anyone, except young children, by a personal name, but uses the appropriate relationship term. The method of determining the relationship of two individuals is extremely simple. Let us suppose, as an example, that two men, A and B, meet each other for the first time. The man

A has a relative C who is his *mama*. At the same time C is the *kaga* of B. It immediately follows that A and B are *kumbali* to each other. Yet in all this system of widely extended relationships the real relations of consanguinity are never lost sight of. The natives preserve their genealogies carefully in their memories, though in these degenerate days the younger men and women neglect such knowledge. With the help of the genealogical knowledge of the older men and women it is possible to trace out some relationship, however distant it may be, between any two members of the same tribe. When a stranger comes to a camp that he has never visited before, he does not enter the camp, but remains at some distance. A few of the older men, after a while, approach him, and the first thing they proceed to do is to find out who the stranger is. The commonest question that is put to him is "Who is your *maeli*?" (father's father). The discussion proceeds on genealogical lines until all parties are satisfied of the exact relation of the stranger to each of the natives present in the camp. When this point is reached, the stranger can be admitted to the camp, and the different men and women are pointed out to him and their relation to him defined. I watched two or three of these discussions in West Australia. I took with me on my journey a native of the Talainji tribe, and at each native camp we came to, the same process had to be gone through. In one case, after a long discussion, they were still unable to discover any traceable relationship between my servant and the men of the camp. That night my "boy" refused to sleep in the native camp, as was his usual custom, and on talking to him I found that he was frightened. These men were not his relatives, and they were therefore his enemies. This represents the real feelings of the natives on the matter. If I am a blackfellow and meet another blackfellow that other must be either my relative or my enemy. If he is my enemy I shall take the first opportunity of killing him, for fear he will kill me. This, before the white man came, was the aboriginal view of one's duty towards one's neighbour, and it still remains at the back of his mind at the present day in spite of the new conditions brought about by the coming of the white man.

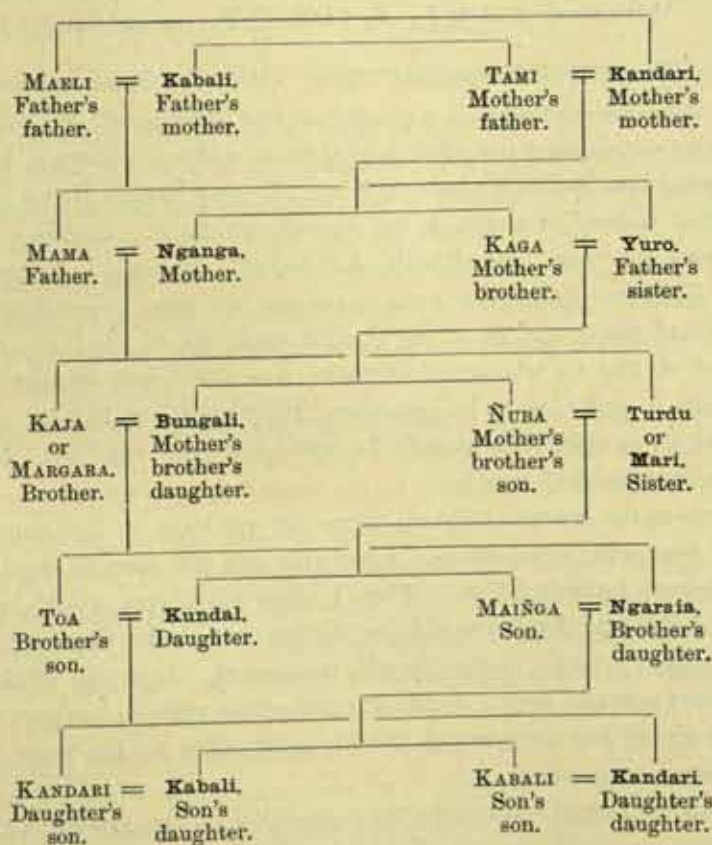
In order to explain the Kariera system of relationship, I have made out the two accompanying genealogical tables, by means of which it is possible to trace out the relation of a man or a woman to any other member of the same society. We must regard the tribe as divided into what I shall speak of as "generations," using that word in not quite its usual sense. We may use special terms to denote these generations. Thus I shall speak of a man's own generation as "contemporary," and shall call the "first ascending generation" that of a man's parents, and the "second ascending generation" that of his grandparents, and "first descending" and "second descending" those of his children and his grandchildren respectively.

The first ascending generation includes a man's father and mother and the brothers and sisters of these. He calls his father and his father's brothers *mama*; his father's sister he calls *toa*; his mother and mother's sisters are his *nganga* and his mother's brothers are his *kaga*. The wife of any *mama* is *nganga* and the

classified into two divisions. In one of these divisions all the men are *maeli* and the women are *kandari*; in the other the men are *tami* and the women are *kabali*. *Maeli* and *kandari* are brothers and sisters to each other, and so are *tami* and *kabali*. *Maeli* and *kabali* are husband and wife to each other, and so are *tami* and *kandari*.

The children of *maeli* and *kabali* are all *mama* and *toa*, and the children of *tami* and *kandari* are all *kaga* and *nganga*. Thus in the first ascending generation also, all the relatives of a man are divided into two groups, in one of which all the males are *mama* and the females are *toa*, while in the other the males are *kaga* and the females are *nganga*.

TABLE 2. FEMALE SPEAKING.



The children of relatives of the first ascending generation belong to the contemporary generation. The son of any *mama* and of any *nganga* is either *kaja* or *margara* according as he is older or younger than the speaker, and the daughters are similarly either *turdu* or *mari*. The children of a *kaga* or a *toa* are *kumbali* (male) and *nuba* (female).

In the first descending generation the children of a *kaja* or a *margara* and a *nuba* are *maiŋga* and *kundal*, these being the terms that a man applies to his own son and daughter. The children of a *turdu* or *mari* and a *kumbali* are *kuling* and

ngaraia. In the second descending generation the children of *maiŋga* and *ngaraia* are *maeli* without distinction of sex, and the children of *kuling* and *kundal* are *tami*. This last feature is due to the reciprocal use of the terms for grandparents. Thus I am *maeli* (father's father) to my son's son and he is *maeli* to me. Similarly I am *maeli* to my son's daughter and she is *maeli* to me. If a woman is speaking she is *kabali* (father's mother) to her son's son and he is therefore *kabali* to her. The following table shows how the terms for grandparents and grandchildren are used reciprocally :—

| | | |
|----------------------|---|--------------------------------|
| Father's father M.F. | = | Son's son and daughter M. |
| Father's mother M.F. | = | Son's son and daughter F. |
| Mother's father M.F. | = | Daughter's son and daughter M. |
| Mother's mother M.F. | = | Daughter's son and daughter F. |

By means of the laws enumerated above, which are expressed in a concrete form in the genealogical tables, it is possible to find immediately the relation of any two persons by considering the relation of them to a third. There is, however, one important point that has so far been omitted. It may happen that a man B is by genealogy the "father" of a man A, but is younger than A. In such a case A calls B not "father," but "son," and B calls A "father," although by genealogy he is his "son." The same thing may occur in the case of a *kaga*, a *nganga*, or a *toa*. In one case I found three men, A, B, and C, aged about 65, 63, and 60, respectively. The father of A and C, who were brothers, was the "elder brother" of B, and therefore, both A and C were, by genealogy, the "sons" of B. He called C his "son," but as A was older than himself, he called him not "son," but "father," thus reversing the genealogical relation.

There are in the Kariara tribe no terms for relatives in the third ascending or the third descending generations. I was able in a few cases to obtain the name of a man's father's father's father. When I asked what term would be applied to this relative I was told that he would be *maiŋga* (son). In the same way I was told that a father's father's mother would be *ngaraia*. I do not think that these terms were ever actually used. I did not come across a single instance of a man or woman, and his or her great-grandchildren being alive at the same time. The point is, however, interesting.

We can now proceed to examine the connection of the system of relationship with the classes previously described. It has been shown that by the system of relationship the whole tribe is divided into a number of different groups of relatives. Thus if I am a man, every male with whom I have any social relations is either (1) my *maeli*, (2) my *tami*, (3) my *mama*, (4) my *kaga*, (5) my *kaja* or *margara*, (6) my *kumbali*, (7) my *maiŋga*, or (8) my *kuling*. My *maeli* are either older than myself, as my father's father, or younger, as my son's son, and similarly with my *tami*. My *kaja* are older than myself, and my *margara* are younger, while my *kumbali* may be either older or younger. My *mama* are older than I, and I am *maiŋga* to them; my *maiŋga* are younger than I, and I am *mama* to them. Similarly with the

relatives *kaga* and *kuling*, I am *kuling* to my *kaga*, and *kaga* to my *kuling*. These male relatives may be arranged in the following diagram, a horizontal line separating those older from those younger than the speaker :—

| A | D | B | C |
|--------------------|---------|-------------------|---------|
| Maeli. Kaja. | Mama. | Tami. Kumbali. | Kaga. |
| Margara. Maeli. | Maiñga. | Kumbali. Tami. | Kuling. |

Thus I belong to the column A, and every person represented in that column is either my *maeli*, my *kaja*, or my *margara*. Every person in column D is either *mama* or *maiñga* to me, and is either *mama* or *maiñga* to every person in column A. But a man who is *mama* to me may be *maiñga* to my *kaja*, and one who is *maiñga* to me may be *mama* to my *margara*. Inversely every person in column A is either *mama* or *maiñga* to every person in column D. Similarly the men of Column B are *tami* and *kumbali* to those of A, and inversely those of A are *tami* or *kumbali* to those of B.

The four columns in the diagram correspond to the four classes which have been described earlier. Thus if I belong to the class Banaka all the men of that class are, by genealogy, either *maeli*, *kaja*, or *margara* to me; the men of the Palyeri class are my *mama*, and my *maiñga*; those of the Burung class are my *tami* or my *kumbali*; and the Karimera men are my *kaga* and *kuling*.

It was stated earlier that a man of the Banaka class can only marry a woman of the Burung class. We are now able to explain what this rule means. In the Kariera tribe a man may only marry a woman who stands to him in the relation of *ñuba*. If the man is Banaka his *ñuba* is Burung, and therefore in saying that he must marry a *ñuba*, we are saying that he must marry a Burung woman. But amongst the Burung women there are some who are not his *ñuba*, namely, his *kabali* and his *tami*, and these women he may not marry. A man's *kabali* may be only a few years older than himself, so that marriage would be quite possible. It is, however, in the Kariera tribe, forbidden. The marriage rule of the Kariera is simplicity itself: a man may marry a woman who is his *ñuba*, but he may marry no one else. Thus we may say that in the Kariera tribe marriage is regulated by relationship, and by relationship alone.

A man applies the term *ñuba* to the daughter of any *kaga* and any *toa*. He applies the term *kaga* to his mother's brother and the term *toa* to his father's sister. Therefore it is obvious that by the above-stated marriage rule a man may marry the daughter of his own mother's brother, or of his own father's sister. Such

marriages of the children of a brother with those of his sister are common in this tribe. Indeed we may say that the proper person for a man to marry, if it be possible, is his own first cousin. In the genealogies collected by me I found that in nearly every case where such a marriage was possible it had taken place.

A common custom in this as in most Australian tribes is the exchange of sisters. A man, A, having one or more sisters finds a man, B, standing to him in the relation of *kumbali* who also possesses a sister. These men each take a sister of the other as wife. As a result of this practice it often happens that a man's father's sister is at the same time the wife of his mother's brother. If these two have a daughter she will in the ordinary course of events become the man's wife.

As the natives themselves put it to me, a man must look to his *kaga* to provide him with a wife by giving him one or more of his daughters. The relative who is most particularly his *kaga*, in the same sense that his own father is most particularly his *mama*, is his mother's brother, who may or may not be at the same time the husband of his father's sister. It is to this man that he looks first for a wife. If his own mother's brother has no daughter, or if she is already disposed of, he must apply to other persons who stand to him in the relation of *kaga*, to the husband of his father's sister for example. He may have to go much further afield and apply to some distant *kaga*, but this is only the case when there are available no nearer relatives. Thus we may say that the man who is pre-eminently *kaga* (as his own father is pre-eminently *mama*) is his mother's brother; the woman who is pre-eminently *toa* is his own father's sister who should be the wife of the *kaga*; consequently the woman who is pre-eminently a man's *ñuba* is the daughter of his own mother's brother, or failing this, of his own father's sister. It is this woman to whom he has the first right as a wife.

The arrangement of marriages, as in other Australian tribes, is managed by the older people. While the children are quite small it is arranged which ones are to marry. The death of one or other of them may, of course, necessitate a new arrangement. Thus, when a boy is growing up he learns which girl is to be his wife. To the father of this girl he owes certain duties, the chief being that he must make him presents from time to time. This man is his father-in-law, and, as has been said, is in some cases his mother's brother. At the same time the man has a secondary right to a number of other girls. If the girl betrothed to him should die, he will have to try to obtain one of these, and therefore he must devote some attention to their fathers, making them presents from time to time, and going to visit them. It is this fact that seems to determine the social relations of a man with his various *kaga*. They are all prospective fathers-in-law. A man owes the same sort of duties to all the men whom he calls *kaga*, but the recognition of these duties is more intense in some cases than in others.

A man applies the name *toa* to his father's sister and to the wife of any *kaga*, that is to any woman who might be his mother-in-law. He may not speak to any of these women, nor have any social dealing whatever with them. If for any reason he is obliged to be near one of his *toa* he must take care that he does not

look at her. He will, if possible, interpose a hut or bush between himself and her, or else he will sit with his back to her. This rule breaks down when a man gets on in years and has been long married with children of his own. He then ceases to speak of these women as *toa*, calling them *yumani* instead, and he is permitted to speak to them if he wishes, although the old habit still shows itself, and he has very little to do with them. I was not able to make out that the necessity of avoidance was more intense in respect to the actual mother-in-law. A man must avoid all his *toa*, and must apparently avoid them all to an equal degree, until the time comes when they can be regarded as *yumani*, and the necessity for avoidance ceases.¹

There is no similar avoidance in the case of a woman, that is to say, she does not need to avoid her father-in-law or her mother-in-law, but only her son-in-law. A woman calls her husband's mother not *toa* or *yumani* but *yuro*.

We may resume briefly the chief points of the above description :—

- (1) The relationship system of the Kariara tribe is not only a system of names or terms of address, but is pre-eminently a system of reciprocal rights and duties. A man owes the same duties (though not in the same degree) to all the persons to whom he applies the same term. Thus the relationship system regulates the whole social life of the people.
- (2) It is based on actual relations of consanguinity and affinity that can be traced by means of the genealogical knowledge preserved by the old men and women.
- (3) The recognition of relationships is so extended that everyone with whom an individual comes in contact in the ordinary course of social life is his relative. It is impossible for a man to have any social relations with anyone who is not his relative because there is no standard by which two persons in this position can regulate their conduct towards one another. I am compelled to treat a person differently according as he is my "brother," "brother-in-law," "father," or "uncle." If I do not know which of these he is, all intercourse is impossible.
- (4) Within the body of relatives of a given kind distinctions are made between nearer and more distant relatives, just as in English we distinguish between nearer and more distant "cousins" though still calling them all by the same name. These distinctions are not of kind but of degree, if we may use the phrase. Thus though a man owes certain duties to all the men he calls "father" he must observe them more particularly in regard to his own father or his father's brothers than in regard to a distant cousin of his father. The same is the case with every other relationship.

¹ I believe that the matter is settled by the older men and women, who decide that two persons who are *toa* to each other shall be made *yumani*. There may be some sort of ceremony on such occasions, but I could not ascertain any details about it.

- (5) In Australia, much more than in civilized communities, a great deal of attention is paid to actual relationship by blood and marriage. Thus the Australian system is characterized, not by a less intense, but by a more intense recognition of actual relationships of consanguinity.
- (6) The classes of the Kariara tribe are groups of related persons. The rule that a man of one class may only marry a woman of one of the other classes is the result of the more fundamental rule that a man may only marry a woman bearing to him a certain relation of consanguinity, namely, the daughter of his mother's brother. Marriage is regulated by consanguinity and by consanguinity alone.

When a girl is old enough to be claimed as a wife she is handed over by her father to the husband, who takes her away to his own camp. There does not seem to be any ceremony on such an occasion. Polygyny is practised. In the genealogies I did not find a case of a man having more than three wives alive at the same time. Where there are several sisters in a family they are all regarded as the wives of the man who marries the eldest of them. He may, if he chooses, waive his right in favour of his younger brother, with the consent of the father of the girls. If a family contained four girls and a man took the two oldest, but permitted his younger brother to marry the third, the youngest daughter thereby also becomes the wife of the younger brother, and the older brother cannot claim any right to her. When a man dies his wives pass to his younger brother or to the man who stands nearest to him in the relation of *margara*. This man marries the widow and adopts the children.

There is no polyandry; that is to say, a woman is always the wife of one man alone. The word *nguranu* is used by a man to distinguish his own wife from other women whom he might have married but who are actually the wives of his own or tribal brothers, the latter being called *yarungu*. In this and the neighbouring tribes there are certain customs of sexual licence on ceremonial occasions when men who stand in the relation of brother to one another lend each other their wives. I was not able to witness one of these ceremonies and what little information I obtained in answer to questions is too unreliable to allow me to speak definitely on the subject.

A woman who is promised or married to a given man may run away with another. If the two who thus elope are not *nuba* to each other they are separated by the tribe and punished, the woman being beaten by her female relatives and the man speared through the thigh. If they are of the proper relation, that is, if they are *nuba* to each other, it rests with the husband of the woman to get her back if he can. This often leads to a fight in which one or other gets killed. Practically all the quarrels amongst the natives are about the women.

In many Australian tribes what we may call irregular marriages are in some instances permitted, that is, a man is permitted by the tribe to marry a woman who by the tribal law is forbidden him. I have obtained good evidence, by means

of genealogies, that in a number of tribes of Western Australia such irregular marriages took place before the country was occupied by white men. In the Kariëra tribe one or two such marriages have taken place in recent years, but have been viewed with great disapproval, and in the genealogies I collected, there is not a single instance of such a marriage taking place before 1860.

Having described the relationship organization of the Kariëra tribe it is necessary to consider the relation of that system to the local organization previously described. The whole tribe is divided into two couples of classes, Banaka-Palyeri and Karimera-Burung. Each local group, however, that is, each of the local subdivisions of the tribe, consists of members of one couple only. Thus one local group consists of men and women of the classes Karimera and Burung, while another consists of Banaka and Palyeri men and women. In the map of the tribe, underneath the numeral denoting each local group, will be found two letters indicating the couple to which the group belongs. B.P. stands for Banaka-Palyeri, and K.B. for Karimera-Burung. It is thus possible to realize at a glance the geographical distribution of the couples.

In referring to a local group of the same couple as himself a native often uses the term *ngaju maru*, and refers to a local group of the other couple as *balu maru*. *Ngaju* means "my" and *balu* means "his," these being the common personal pronouns. I do not know what would be a suitable translation of *maru*. We may regard the two phrases as equivalent to "our side" and "the other side." A man sometimes speaks of his own local group as *maman-maru*, from *mama*, "father."

It is obvious from the above account that a man can never marry a woman of his own local group, since such women are either *kandari*, *toa*, *turdu*, *mari*, *kundal*, or *maeli* to him. We therefore find in this tribe the condition often called "local exogamy" by ethnologists. On analysis, however, we see that this local exogamy is simply the result of the regulation of marriage by relationship, together with the peculiar constitution of the local group.

I propose in this and future publications to use the word "clan" to denote a social division of this kind, of which the Kariëra local group is an example. A clan by this definition consists of a body of persons who are closely related to one another in one line (that is, either in the male line or in the female line) and who are clearly marked off in some way from the similar divisions of the same society. In the Kariëra tribe we have clans with descent in the male line. Each clan includes a number of men who are, by the relationship system, father's father, father, brother, son, or son's son to each other. Each clan is marked off from every other by the possession of its own territory, and as we shall see later, by other features also.

A man's own clan contains only men who are his *maeli*, *mama*, *kaja*, *margara*, and *mainga*, and it contains all his nearest relatives of these kinds, thus serving to mark off those most nearly related to him from those more distantly related. This is the essential feature of a clan in Australia, that it provides this distinction between near and distant kindred.

Totemism.

We have seen that the Kariëra tribe is divided into a number of local groups each with its own defined territory, with descent in the male line, and that each local group belongs to one of the two couples into which the tribe is divided. It has been shown that the local group thus forms what we may call a "clan," with male descent, all the male members of the clan being "father's father," "son's son," "father," "son," or "brother," to each other.

Each of these clans forms a single totemic group, possessing a number of totems. All the totems of the clan are equally the totems of every member of the clan. For each totem belonging to the clan there is within the territory of the clan a ceremonial ground or totemic centre for which the name is *talû*. The *talû* is a spot set apart for the performance of totemic ceremonies. Thus the *Pidira talû* is the spot set apart for the performance of ceremonies connected with the *pidira*, white cockatoo. The *talû* belongs to the men of the local group in whose territory it is found, and the ceremonies connected with the *talû* belong to them at the same time. If a *talû* lies within the territory of a certain local group only the members of that local group can perform the ceremony connected with it.

The totemic ceremonies of the Kariëra tribe have been discontinued for many years. I was therefore unable to see any of them performed and had to rely entirely on what the natives told me about them. Information of this kind is of course very unsatisfactory. The purpose of the ceremonies is said to be to increase the supply of the animal, plant, or other object with which it is connected. Thus the purpose of the *mungu* or white ant ceremony is to increase the white ants, which are eaten by the aborigines. At many of these totemic ceremonial grounds there is either a single boulder or a heap of small stones and these play a part in the ceremony connected with the place. In some cases it would seem that the stone or heap is struck with clubs or with stones held in the hand. The performers of these ceremonies are painted, and decorated with feathers and bird's down. The women of the clan take part in the ceremonies as well as the men. In some cases songs are sung, in others one of the performers calls out the names of different parts of the country. The head man of the clan, unless he be too old, takes the leading part in the ceremonies of his clan.

There is no prohibition whatever against a man or woman killing any one of his or her totems, if it be an animal, or against eating it if it be edible.

The following is a list of the totems of some of the clans of the Kariëra tribe. The list does not profess to be complete. It does not include all the clans of the tribe, nor can I be sure that all the totems of any clan are enumerated. The numbers of the clans in this list correspond to those on the map.

The clans numbered XVIII and XIX are doubtful. They lie at the boundary of three tribes, the Kariëra, Ngaluma and Injibandi, and it is impossible to say with certainty to which tribe each clan belongs. Thus I was told more than once that XVIII was "half Ngaluma, half Kariëra," and it was sometimes spoken of

as a Kariëra clan and sometimes as Ngaluma. In exactly the same way there is some doubt whether XIX is Kariëra or Injibandi, or even Ngaluma. I have included both clans in the Kariëra tribe for convenience, not because their claim to belong to that tribe is any stronger than their claim to belong to the neighbouring tribes. The fact is that one tribe is not clearly marked off from its neighbours, but there are often near the border a number of local groups that occupy an indeterminate position.

I.—Karimera-Burung.

| | | | | | | |
|------------------|-----|-----|----------------|-----|-----|-----------------|
| <i>Yiliguji</i> | ... | ... | rainbow | ... | ... | at Womalana. |
| <i>Pidira</i> | ... | ... | white cockatoo | ... | ... | at Balla-balla. |
| <i>Kuringja</i> | ... | ... | March fly | ... | ... | at Balla-balla. |
| <i>Māngābuga</i> | ... | ... | a fish. | | | |
| <i>Yatumba</i> | ... | ... | " | | | |
| <i>Pira</i> | ... | ... | conch shell. | | | |

II.—Banaka-Palyeri.

| | | | | | | |
|-------------------|-----|-----|----------|-----|-----|-------------------|
| <i>Wongali</i> | ... | ... | a lizard | ... | ... | at Kayingarana. |
| <i>Tarbun</i> | ... | ... | crab. | | | |
| <i>Balanu</i> | ... | ... | a fish. | | | |
| <i>Banangura</i> | ... | ... | " | ... | ... | at Magalana. |
| <i>Waragalara</i> | ... | ... | " | .. | ... | at Madukurbarana. |
| <i>Churi</i> | ... | ... | " | | | |
| <i>Minagalara</i> | ... | ... | " | | | |
| <i>Kagumada</i> | ... | ... | " | ... | ... | at Kagumadana. |
| <i>Nyumeru</i> | ... | ... | " | | | |
| <i>Kandara</i> | ... | ... | a seed | ... | ... | at Kayingarana. |

III.—Banaka-Palyeri.

| | | | | | | |
|------------------|-----|-----|----------------|-----|-----|-----------------|
| <i>Wanangura</i> | ... | ... | whirlwind | ... | ... | at Wanangurana. |
| <i>Kambuda</i> | ... | ... | child or baby | ... | ... | at Pilgun. |
| <i>Puna</i> | ... | ... | sexual desire | ... | ... | at Kalbana. |
| <i>Wajabi</i> | ... | ... | a small mammal | ... | ... | at Wajabina. |
| <i>Wanangadi</i> | ... | ... | a snake | ... | ... | at Bambana. |
| <i>Kulibiri</i> | ... | ... | " | ... | ... | at Kulibirina. |
| <i>Mungu</i> | ... | ... | white ant | ... | ... | at Mungulina. |
| <i>Tanamada</i> | ... | ... | a grub | ... | ... | at Maludarana. |
| <i>Taiyimara</i> | ... | ... | honey flower | ... | ... | at Kaiyuna. |
| <i>Yigara</i> | ... | ... | mangrove | ... | ... | at Walunguna. |
| <i>Nyura</i> | ... | ... | (?) | | | |
| <i>Pindanu</i> | ... | ... | (?) | | | |

IV.—Karimera-Burung.

| | | | | | | |
|---------------|-----|-----|----------|-----|-----|--------------------|
| <i>Puriya</i> | ... | ... | the tide | ... | ... | at Kurjadagabuna. |
| <i>Kunya</i> | ... | ... | mosquito | ... | ... | at Chindagalarana. |

| | | | | | | |
|-------------------------|-----|-----|-------------|-----|-----|--------------------|
| <i>Kumi</i> ... | ... | ... | sand-fly | ... | ... | at Kumina. |
| <i>Ngalun</i> ... | ... | ... | a snake | ... | ... | at Ngaluna. |
| <i>Mogudi</i> ... | ... | ... | a snake. | | | |
| <i>Yurguliguli</i> ... | ... | ... | a snake | ... | ... | at Ngaluna. |
| <i>Tambalambala</i> ... | ... | ... | a bird | ... | ... | at Chindagalarana. |
| <i>Namali</i> ... | ... | ... | a fish | ... | ... | at Kabuna. |
| <i>Ngalara</i> ... | ... | ... | " | ... | ... | at Ngalarana |
| <i>Muraban</i> ... | ... | ... | " | | | |
| <i>Waberi</i> ... | ... | ... | " | .. | ... | at Majanina. |
| <i>Chindabiri</i> ... | ... | ... | " | | | |
| <i>Kalandi</i> ... | ... | ... | " | ... | ... | at Kalandina. |
| <i>Mdnjir</i> ... | ... | ... | a flat fish | ... | ... | at Ngamana. |
| <i>Kadumada</i> ... | ... | ... | medusa (?) | ... | ... | at Kalandina. |
| <i>Ngalgu</i> ... | ... | ... | root | ... | ... | at Yarina. |
| <i>Bagada</i> ... | ... | ... | grass | ... | ... | at Chindagalarana. |
| <i>Waru</i> ... | ... | ... | a seed | ... | ... | at Chindagalarana. |

V.—Banaka-Palyeri.

| | | | |
|---------------------------|-----|-----|------------|
| <i>Ngandarimigura</i> ... | ... | ... | a shark. |
| <i>Ngadabururu</i> ... | ... | ... | a fish. |
| <i>Midu</i> ... | ... | ... | " |
| <i>Moji</i> ... | ... | ... | sting ray. |
| <i>Yidawari</i> ... | ... | ... | saw-fish. |
| <i>Walimbira</i> ... | ... | ... | a fish. |
| <i>Munyangoto</i> ... | ... | ... | " |
| <i>Malal</i> ... | ... | ... | " |
| <i>Piain</i> ... | ... | ... | " |
| <i>Karbu</i> ... | ... | ... | " |
| <i>Ngalgura</i> ... | ... | ... | " |
| <i>Paldharangara</i> ... | ... | ... | " |
| <i>Ngundara</i> ... | ... | ... | " |
| <i>Bungari</i> ... | ... | ... | crab. |

VI.—Karimera-Burung.

| | | | |
|--|-----|-----|-----------|
| <i>Kudunguru</i> ... | ... | ... | ebb-tide. |
| <i>Kalunganara</i> ... | ... | ... | a snake. |
| <i>Bulyago</i> ... | ... | ... | a fish. |
| <i>Chabiya</i> ... | ... | ... | " |
| <i>Kailyu</i> ... | ... | ... | " |
| <i>Wandamala</i> (or <i>wanda-</i> <i>mana</i> (?)) | | | " |
| <i>Wadabara</i> ... | ... | ... | " |
| <i>Mingalara</i> ... | ... | ... | " |

| | | | |
|-------------------|-----|-----|---------|
| <i>Waragalara</i> | ... | ... | a fish. |
| <i>Churi</i> | ... | ... | " |
| <i>Nyunurdu</i> | ... | ... | " |
| <i>Kunabandi</i> | ... | ... | " |
| <i>Wili</i> | ... | ... | " |
| <i>Yuandu</i> | ... | ... | " |
| <i>Magadu</i> | ... | ... | " |
| <i>Madamada</i> | ... | ... | " |

VII.—Banaka-Palyeri.

| | | | | | | |
|-------------------|-----|-----|---------|-----|-----|----------------------|
| <i>Kaliwana</i> | ... | ... | a grub | ... | ... | at Kaliwanana. |
| <i>Wanangadi</i> | ... | ... | a snake | ... | ... | at Wanangadikundina. |
| <i>Kunkun</i> | ... | ... | a fish. | | | |
| <i>Wandimara</i> | ... | ... | " | ... | ... | at Wandimaranguna. |
| <i>Pirbila</i> | ... | ... | " | | | |
| <i>Ngulgun</i> | ... | ... | " | | | |
| <i>Budabudara</i> | ... | ... | " | | | |
| <i>Banagura</i> | ... | ... | " | | | |
| <i>Wanngai</i> | ... | ... | " | | | |
| <i>Wirinbuga</i> | ... | ... | " | | | |
| <i>Nanungana</i> | ... | ... | a seed. | | | |
| <i>Tulimalu</i> | ... | ... | " | | | |

VIII.—Karimera-Burung.

| | | | | | | |
|-----------------------|-----|-----|-----------------|-----|-----|----------------|
| <i>Kanjamara</i> | ... | ... | a root | ... | ... | at Wargalgura. |
| <i>Kalumbu</i> | ... | ... | a fruit. | | | |
| <i>Bangamalu</i> | ... | ... | (?) | | | |
| <i>Pidira</i> | ... | ... | white cockatoo. | | | |
| <i>Kalunganara(?)</i> | ... | ... | snake. | | | |
| <i>Wuta</i> | ... | ... | (?) | ... | ... | at Maringa. |

IX.—Banaka-Palyeri.

| | | | | | | |
|--------------------|-----|-----|----------------|-----|-----|----------------------|
| <i>Woluga</i> | ... | ... | frog. | | | |
| <i>Mali</i> | ... | ... | " | | | |
| <i>Chargarang</i> | ... | ... | (?) | | | |
| <i>Wogurarangu</i> | ... | ... | (?) | | | |
| <i>Walambari</i> | ... | ... | opossum. | | | |
| <i>Murumbari</i> | ... | ... | a beetle | ... | ... | at Murumbarina. |
| <i>Milabilya</i> | ... | ... | | | | |
| <i>Kobilya</i> | ... | ... | dew | ... | ... | at Murumbarina. |
| <i>Purgun</i> | ... | ... | a beetle. | | | |
| <i>Chulgu</i> | ... | ... | a lizard | ... | ... | at Chulguna. |
| <i>Nyiriba</i> | ... | ... | a small mammal | ... | ... | at Tungadangkundina. |

X.—Karimera-Burung.

| | | | | | |
|------------------|-----|-----|----------------------------------|-----|-------------------|
| <i>Walamara</i> | ... | ... | hot weather | ... | at Walamarana. |
| <i>Wanbangu</i> | ... | ... | eaglehawk | ... | at Chidamba. |
| <i>Wagura</i> | ... | ... | crow | ... | at Wagurana. |
| <i>Biliga</i> | ... | ... | hawk | ... | at Kurāna. |
| <i>Wolgalu</i> | ... | ... | red gum | ... | at Malumalunguna. |
| <i>Kunguware</i> | ... | ... | (?) | ... | at Karpa. |
| <i>Toli</i> | ... | ... | a grub | ... | at Pardingunina. |
| <i>Mariang</i> | ... | ... | " | ... | at Maraianguna. |
| <i>Maguya</i> | ... | ... | the red grub found in gum trees. | | |
| <i>Chiyin</i> | ... | ... | a tree. | | |

XI.—Banaka-Palyeri.

| | | | | | |
|----------------------|-----|-----|------------------------------|-----|--------------|
| <i>Kolobun</i> | ... | ... | honey flowers (cage- put) | ... | at Kolobuna. |
| <i>Murigangabu</i> | ... | ... | grub | ... | at Muruna. |
| <i>Maldhangara</i> | ... | ... | honey. | | |
| <i>Walyuru</i> | ... | ... | a seed. | | |
| <i>Maiyingu</i> | ... | ... | (?) | | |
| <i>Malyagolya(?)</i> | ... | ... | fish poison. | | |
| <i>Talburu</i> | ... | ... | " " | | |

XII.—Banaka-Palyeri.

| | | | | | |
|--------------------------|-----|-----|-------------------|--|--|
| <i>Kalagolu</i> | ... | ... | fresh-water fish. | | |
| <i>Mudu</i> | ... | ... | cold weather. | | |
| <i>Waranu</i> | ... | ... | edible gum. | | |
| <i>Walaiyura</i> | ... | ... | | | |
| <i>Wanyali (Walyuru)</i> | ... | ... | seed. | | |
| <i>Nyurukadingana</i> | ... | ... | | | |
| <i>Chugura</i> | ... | ... | fresh-water fish. | | |
| <i>Pidbarara</i> | ... | ... | " " | | |

XIII.—Banaka-Palyeri.

| | | | | | |
|-------------------|-----|-----|-----------|-----|-----------------|
| <i>Yugoro</i> | ... | ... | dingo | ... | at Yulonguina. |
| <i>Nangu</i> | ... | ... | snake | ... | at Murijonguna. |
| <i>Mangaiyura</i> | ... | ... | spinifex | ... | at Mogurina. |
| <i>Tungariri</i> | ... | ... | " | | |
| <i>Puru</i> | ... | ... | fly | ... | at Nyanyanana. |
| <i>Yalya</i> | ... | ... | lizard | ... | at Yalyabaduna. |
| <i>Maribula</i> | ... | ... | spinifex. | | |

XIV.—Karimera-Burung.

| | | | | | | |
|---------------------|-----|-----|-----|---------------------|-----|------------------|
| <i>Kuraba</i> | ... | ... | ... | ... | ... | at Kurabana. |
| <i>Wuda</i> | ... | ... | ... | ... | ... | at Nguberna. |
| <i>Walba</i> | ... | ... | ... | ... | ... | at Walbangunina. |
| <i>Jima</i> | ... | ... | ... | a fruit. | | |
| <i>Bajela</i> | ... | ... | ... | " | | |
| <i>Nyuna</i> | ... | ... | ... | a snake (adder(?)). | | |
| <i>Manalya</i> | ... | ... | ... | | | |
| <i>Wandajiri(?)</i> | ... | ... | ... | a lizard. | | |
| <i>Minamba</i> | ... | ... | ... | ... | ... | at Minambana. |
| <i>Manangura</i> | ... | ... | ... | | | |
| <i>Woba</i> | ... | ... | ... | | | |

XV.—Banaka-Palyeri.

| | | | | | | |
|------------------|-----|-----|----------|-----|-----|------------|
| <i>Yungoma</i> | ... | ... | a lizard | ... | ... | at Malana. |
| <i>Mandarara</i> | ... | ... | dew. | | | |

XVI.—Karimera-Burung.

| | | | | | | |
|--------------------|-----|-----|--------------|-----|-----|-----------------|
| <i>Wanbangu</i> | ... | ... | eaglehawk... | ... | ... | at Chidambana. |
| <i>Ngaba</i> | ... | ... | a root. | | | |
| <i>Nyurukalara</i> | ... | ... | | | | |
| <i>Ngalgu</i> | ... | ... | a root. | | | |
| <i>Kamarangu</i> | ... | ... | a fish | ... | ... | at Kamaranguna. |
| <i>Kandarigura</i> | | | | | | |

XVII.—Karimera-Burung.

Totems uncertain.

XVIII.—Karimera-Burung.

| | | | | | | |
|---------------------|-----|-----|--------------------------|--|--|--|
| <i>Yura</i> | ... | ... | the sun, or hot weather. | | | |
| <i>Kolu</i> | ... | ... | louse. | | | |
| <i>Wanbangu (?)</i> | ... | ... | eaglehawk. | | | |
| <i>Bibingu</i> | ... | ... | (?) | | | |

XIX.—Banaka-Palyeri.

| | | | | | | |
|--------------------|-----|-----|----------|-----|-----|-----------------|
| <i>Walambari</i> | ... | ... | opossum. | | | |
| <i>Maldhangara</i> | ... | ... | honey. | | | |
| <i>Mangula</i> | ... | ... | child. | | | |
| <i>Murumbari</i> | ... | ... | beetle | ... | ... | at Murumbarina. |

This list of clans and totems probably contains some errors, though I used every endeavour to make it as accurate as possible. As the ceremonies in connection

with the totems have been discontinued for many years, all the younger men are ignorant on matters concerning them, and often do not know their own totems. Even the statements of the old men are not always reliable. Thus one old man in giving me the totems of his clan included some belonging to a neighbouring clan of the same couple, and it was only with great difficulty that I sorted out the totems of the two clans. Such errors were much more frequent when a man was enumerating the totems of a clan other than his own, for example, that of his mother. There was thus a large number of cases in which it was doubtful to which of two neighbouring clans a particular totem belonged, and I cannot hope that I found the correct solution in all of these cases. The only satisfactory way of removing errors of this nature would be to visit all the ceremonial grounds of each clan, but this would have required time and labour that I could not give.

A point of considerable theoretical interest is whether each totem is strictly confined to one couple or is to be found in both couples. To determine this I examined all the cases in which the same totem was found in two clans. The following is a list of these cases:—

| | | |
|-----------------------|------------------|-----------------|
| Eaglehawk | X, XVI and XVIII | Karimera-Burung |
| Hot weather | X and XVIII | " " |
| White cockatoo | I and VIII | " " |
| Baby | III and XIX | Banaka-Palyeri |
| Opossum | IX and XIX | " " |
| Honey | XI and XIX | " " |
| Murumbari | IX and XIX | " " |

In the case of the eaglehawk totem it is probable that it belongs either to XVI or to XVIII but not to both. As regards the white cockatoo there was some doubt in my mind as to whether it belonged to clan VIII or to a neighbouring clan of the Banaka-Palyeri couple. The balance of evidence was in favour of the view that it belonged to VIII.

Besides those of the above list there are three species of fish, *churi*, *minagalara*, and *waragalara*, which are included amongst the totems of clan II (Ban-Pal) and also amongst those of clan VI (Kai-Bur). The list for clan VI is a rather doubtful one as it was obtained from only one informant, and he was an old man who spoke no English. I cannot therefore regard this instance as definite proof that the same totem is found in both couples. The best that can be said on the evidence available is that the question must be left open.

Most of the totems are of an edible nature. Among the clans of the coast various species of fish preponderate. There is not a large number of vegetable species in the list of totems. I think it is probable that if the list were complete a larger number would be found. I did not find in the Kariara tribe either a

kangaroo totem or an emu totem, nor was there a rain totem, unless we include in this tribe a clan at Pilbara, which more probably belongs to the Injibandi tribe. The absence of these totems in the Kariera tribe is of some interest when we compare that tribe with others, for example, with the tribes on the Ashburton River, to be described later.

I could not find any prohibition against a man or woman eating his or her own totem if it were edible, or against killing it. Every native that I questioned said that there was no such restriction. A man killed and ate his own totem as readily as he killed and ate any other animal.

As regards many of the totems, it would seem that the totemic centre or ceremonial ground is in a part of the country where the totem species is naturally plentiful. Thus the ceremonial grounds of the white cockatoo and the March fly are in the creek at Balla-balla, where these two species are plentiful. In a number of cases, not only in this but also in other tribes, I was able to satisfy myself that the totem animal or plant is actually more abundant near the ceremonial ground belonging to it than in other parts of the country. In a large proportion of cases the place where the ceremony is performed is called by a name formed by adding the suffix *na* to the name of the totem. Thus there are two totemic centres for *murumbari*, and in both cases the name of the totem centre is *Murumbarina*. Many other examples may be found in the list of totems given above. Similar place names, that is, consisting of the name of some species of animal or vegetable species with the suffix *-na*, are also given to spots where there is no totemic centre, but where the species in question is more abundant than elsewhere.

Initiation Ceremonies.

According to the statements of the natives the chief feature of the initiation ceremony of the Kariera tribe consisted of tying a band of string tightly around the biceps of each arm. The boy during his initiation is called *Wamulu*.

A man of the Karimera class described how he was initiated as follows:—He was seated on the ground with a circle of spectators round him. He sat motionless and silent during the ceremony. Two men, spoken of as *Mamia*, looked after the spectators. They were Palyeri and Karimera. Strings of opossum wool were tied round his two arms just above the biceps. They were tied on by a man who was his *tami* (of the Palyeri class) and a man who was his *maeli* (of the Karimera class). A song, called *chunbaji*, was sung by those looking on:—

| | | |
|-------------|-------------|-------------------|
| <i>Jina</i> | <i>yura</i> | <i>ngari</i> |
| Foot | hot | lying down |
| <i>Jili</i> | <i>mind</i> | <i>burdijang.</i> |
| Arm | band | ? |

At the same time a belt of human hair (*pururu*) was tied round his waist, a band of fur-string (*kundi*) was tied round his head, and a tassel of the tails of the

spinifex rat (*chuba*) was fastened to the head-band so as to hang down on his neck. Two bullroarers¹ (*banangari*) were given to him, a large one and a small. The larger one he wore in the front of his belt and the smaller one at the back of his head-band. The arm-bands are not taken off, but must remain on till they break and fall off.

It seems that amongst the southern Kariera some of the men were initiated by their neighbours the Injibandi, who practised circumcision. In the Kariera tribe itself circumcision was not practised.

The Birth of Children.

When a woman conceives, her condition is said to be due to the action of some particular member of her tribe, who is spoken of as the *wororu* of the child after it is born. If a man of the right relationship gives a woman some food and after eating it she becomes pregnant, this man becomes the *wororu* of the woman's child. Sometimes the *wororu* does not give the woman food to eat, but when he is hunting and has speared a kangaroo or an emu, as he is killing it he speaks to the spirit of the kangaroo and tells it to go to a certain woman. The spirit of the kangaroo follows the man home to the camp and goes inside the woman indicated, who thereby becomes pregnant. The man who sent the kangaroo or other spirit is recognized as the *wororu* of the child. In one case I was told that a man had "made" his own child, having killed an emu and sent the spirit into his own wife. Such a case is, however, an exception. The *wororu* of a child in every case (except this one) that I examined in the Kariera tribe is a man standing in the relation of "brother" to the actual father of the child, and therefore stands in the relation of *mama* (father or father's brother) to the child itself. In most of the cases that I examined the child had its origin in the spirit of a kangaroo killed by the *wororu*. In one case the man showed me a birth-mark on his thigh which he said was where his *wororu* had speared the kangaroo.

I did not find that there were any specific duties that a man or woman owes to his *wororu*. All that the natives told me was that a man "looks after" his *wororu*, that is, he attends to his wants, gives him food when there is an opportunity and treats him much as he does his own father. It is possible, however, that there are some more specific duties that I did not discover.

The animal from whose spirit the child arises, or the animal or vegetable eaten by the mother and causing conception, is not in any way sacred to the individual thus connected with it by birth. He treats it just as he does every other animal or plant.

It must be remembered that "children" are a totem of one of the Kariera clans, and it is the duty of the members of this clan to perform ceremonies for the increase of children.

¹ In this tribe women are permitted to see the bullroarer (*banangari*).

Death and Burial.

When a man or woman is near to death the relatives often throw themselves on the body of the sick person and weep loudly. After the death the relatives, both male and female, wail and cut their scalps until the blood trickles from their heads. The hair of the deceased is cut off and preserved, being worn by the relatives in the form of string.

The body is often buried in the ground, a grave being dug three or four feet in depth. The body is doubled up in a sitting posture and is placed facing the birth-place of the dead man or woman. Occasionally the body is placed in a tree or in a hole in the rocks. It would seem that this is a more honourable form of burial, reserved for those who are particularly esteemed as magicians or hunters. In such cases some of the bones are recovered after a time and kept by the relatives and friends. The relatives of a dead man or woman are required during the period of mourning to abstain from eating the flesh of kangaroo. This was in former times the principal meat food of the natives. In modern times, since the natives have settled down to work on sheep stations, and their principal flesh food has become mutton, they now abstain during the mourning period from this, either instead of kangaroo or in addition to it. A man who is thus restricting his diet is said to be *chaji*. The abstention comes to an end in the following way: A friend of the mourner, who is not at the time himself mourning for anyone, takes some of the fat of the animal, be it mutton or kangaroo, and comes up unobserved behind the man who is *chaji* and rubs the fat on his mouth. After this he is free to eat again of the food, but only if he was unaware of the intention of the man who thus released him from the ban. A mourner will often take great precautions against being surprised by some friend who thinks that he has mourned long enough.

There is little doubt but that the Kariara, like the other tribes of this part of Australia, were originally cannibals. At the present day it is impossible to obtain any reliable information on the subject. It would seem, however, that in some cases they ate parts of their enemies slain in a fight, while in others they ate parts of their own relatives and friends. I suspect that the practice of infanticide existed also in connection with cannibalism, but cannot speak with certainty as to how far the custom was at all general.

Myths and Legends.

Eaglehawk and Crow.

In the times long ago (*palam* or *padam*) there were two eaglehawks (*wanbangu*) who were brothers and had for their wives two galahs (*bilagu*). The eaglehawks were *kaga* (mother's brothers) to the crow (*wagura*). The eaglehawks and their nephew the crow used to go hunting together. The eaglehawks always took for themselves the fattest animals that were killed. One day they had killed some kangaroos. The crow took the fattest and hid them. The kill had been placed near a cave. The two eaglehawks thought that the crow might have hidden the fat kangaroos in the cave, so they went inside to look for them. Then the

crow sealed up the entrance of the cave and left the eaglehawks inside. The crow went home to the camp. The two wives of the eagle hawk were there, waiting for the return of their husbands. (As these two were the *toa* or mothers-in-law of the crow they could not, of course, speak to him or have anything to do with him.) The crow lay down in his camp. By and by he pretended that the ants were biting him. He scratched himself and moved his camp nearer to that of his mothers-in-law. They were watching him. After a while he pretended that the ants were biting him again and moved still nearer. At last he came right up to the camp of the two women and lay with them.

The two eaglehawks managed to get out of the cave in which they had been shut up. They found the crow with their wives. The eaglehawks seized the crow. They rubbed him in the charcoal of the fire and made him black all over. As they did this they said to him, "You stole our wives. You stole our meat. You lay with your *toa*. We make you black now. You will have to steal whatever you can. You will never hunt with us any more. You will not eat fresh meat any more. You will steal what you can from the camps. You will pick up the scraps and offal." The crow could only answer "Wa! Wa! Wa!"

NGALUMA TRIBE.

The Ngaluma tribe occupies the coast of Western Australia from the Maitland River to the Sherlock River, extending inland for about fifty miles. The neighbouring tribes are the Kariara on the east, the Mardudhunera on the south-west, and the Injibandi on the south. Ngaluma is the name by which the members of the tribe refer to themselves and by which they are known to their neighbours. No meaning could be discovered for the name.

Bibliography.

The tribe is described as the Nickol Bay tribe, in Curr's *Australian Race*, vol. i, pp. 296-303, the brief account there given being by Mr. A. K. Richardson. It is referred to in Mr. J. G. Withnell's "Customs and Traditions of the Aboriginal Natives of North-Western Australia," the name being given as *Gnalouma*. In Dr. E. Clement's "Ethnographical Notes on the Western Australian Aborigines" the name is spelled *Gnalluma*. In a pamphlet by "Yabaroo," entitled "Aborigines of North-West Australia," the name is spelled *Gnalooma*.

Present Conditions and Numbers.

There are very few survivors of the Ngaluma tribe, probably not more than sixty all told. They are mostly employed by settlers, chiefly on sheep stations, and all of them, except the old men and women, talk English fairly well. Their country was first occupied by the whites in 1864. In 1866 a large number of them died during an epidemic of small-pox. A little later an outbreak of measles caused a further decrease of the tribe. Mr. A. K. Richardson, writing in Curr's

Australian Race, says that "in 1865 the tribe numbered from two hundred and fifty to three hundred persons." As Mr. Richardson does not mention the area which he takes as his basis, and as he does not seem to have known the tribal name, this statement should not be taken as referring to the whole tribe as here described, but only to that portion of it in the neighbourhood of Roebourne and Nickol Bay. It is probable that the whole Ngaluma tribe included at least twice as many persons as that part of it referred to by Mr. Richardson.

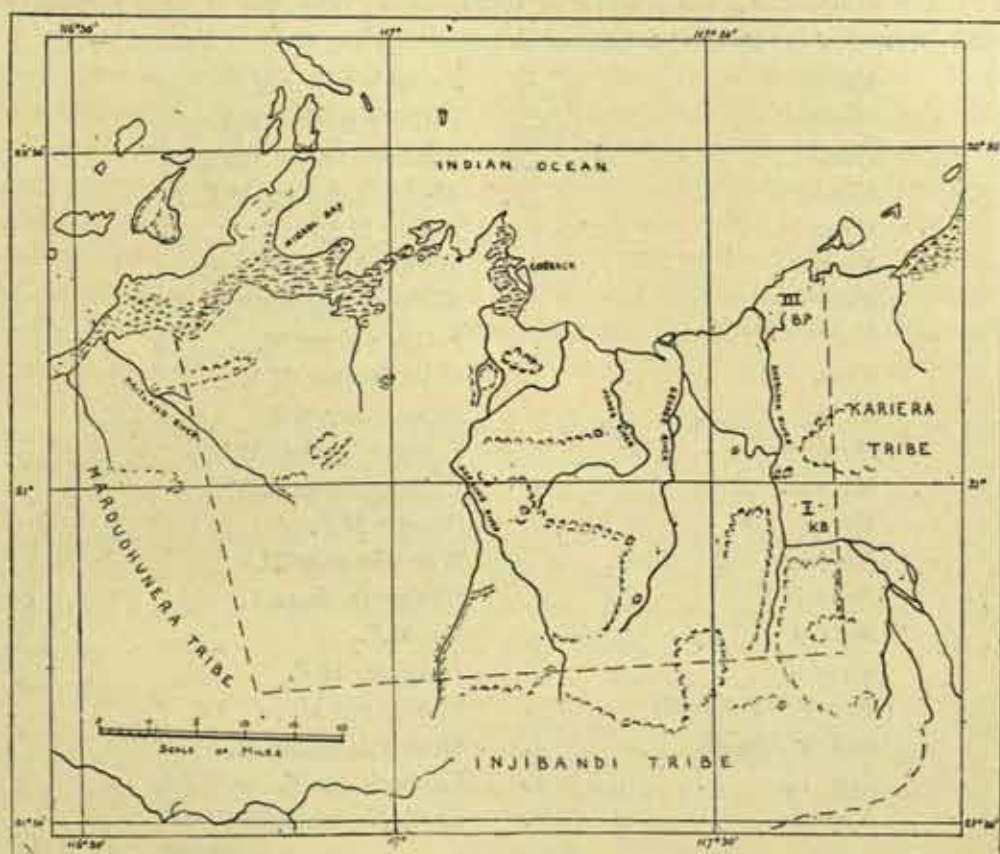


FIG. 2.—MAP OF THE NGALUMA TRIBE.

Tribal and Local Organization.

The extent of the tribal territory is approximately 2500 square miles. It consists of stony hills with intervening flats often of considerable area. The chief rivers are the Maitland, Nickol, Harding and Sherlock. The pools in these rivers provide a fairly plentiful supply of fresh water.

The tribe is divided into local groups in exactly the same way as the Kariera tribe, and the description given under this head for that tribe will apply equally well to the Ngaluma. On the accompanying map are marked by means of Roman numerals two of the local groups about which I was able to obtain information.

Relationship and Marriage.

The relationship system of the Ngaluma tribe is similar in every detail to that of the Kariara tribe, and it is therefore unnecessary to describe it. The classes are:

$$\left(\begin{array}{l} \text{Banaka} = \text{Burung} \\ \text{Kaimera} = \text{Palyeri} \end{array} \right)$$

The following is a list of terms of relationship. The use of each particular term is exactly the same as the use of the corresponding term in Kariara:—

| | | | | |
|----------------------------------|-----|-----|-----|-----------------------|
| <i>Maiali</i> | ... | ... | ... | Father's father M.F. |
| <i>Ngabari</i> | ... | ... | ... | Father's mother M.F. |
| <i>Tami</i> ... | ... | ... | ... | Mother's father M.F. |
| <i>Kandari</i> | ... | ... | ... | Mother's mother M.F. |
| <i>Mama</i> ... | ... | ... | ... | Father M.F. |
| <i>Nganga</i> | ... | ... | ... | Mother M.F. |
| <i>Kaga</i> ... | ... | ... | ... | Mother's brother M.F. |
| <i>Toa</i> ... | ... | ... | ... | Father's sister M. |
| <i>Kaia</i> | ... | ... | ... | Older brother M.F. |
| <i>Turdu</i> | ... | ... | ... | Older sister M.F. |
| <i>Mariara</i> | ... | ... | ... | Younger brother M.F. |
| <i>Mayi</i> ... | ... | ... | ... | Younger sister M.F. |
| <i>Yagan</i> | ... | ... | ... | Consort M.F. |
| <i>Marganu</i> | ... | ... | ... | Wife's brother M. |
| <i>Bungali</i> | ... | ... | ... | Husband's sister F. |
| <i>Mainga</i> | ... | ... | ... | Son M.F. |
| <i>Kundal</i> | ... | ... | ... | Daughter M.F. |
| <i>Yaraija</i> or <i>Ngajela</i> | ... | ... | ... | Sister's son M. |
| <i>Bali</i> or <i>Ngajela</i> | ... | ... | ... | Sister's daughter M. |
| <i>Toa</i> ... | ... | ... | ... | Brother's son F. |
| <i>Ngaraia</i> | ... | ... | ... | Brother's daughter F. |

Totemism.

The totemic organization of the Ngaluma tribe is exactly similar to that of the Kariara. I was not able to obtain much information about the particular totems. Only two clans are marked on the map. The totems of these, and of another of which the exact locality was not determined, are:—

I.—Kaimera-Burung.

| | | | |
|----------------------|-----|-----|---------------------|
| <i>Taiyangul</i> ... | ... | ... | a fresh-water fish. |
| <i>Piranu</i> ... | ... | ... | eel. |
| <i>Jigura</i> ... | ... | ... | a fresh-water fish. |
| <i>Ngaburain</i> ... | ... | ... | a vegetable. |
| <i>Mariangu</i> ... | ... | ... | a grub. |

| | | | |
|-----------------|-----|-----|--------------------|
| <i>Ngangari</i> | ... | ... | a seed. |
| <i>Jimar</i> | ... | ... | a fruit. |
| <i>Kalgal</i> | ... | ... | vomiting sickness. |

II.—Banaka-Palyeri.

| | | | |
|-------------|-----|-----|---------------|
| <i>Mudu</i> | ... | ... | cold weather. |
|-------------|-----|-----|---------------|

III.—Banaka-Palyeri.

| | | | |
|------------------------|-----|-----|------------|
| <i>Kalaijura</i> | ... | ... | a bird. |
| <i>Walaigura</i> | ... | ... | pigeon. |
| <i>Minarang</i> | ... | ... | centipede. |
| <i>Ngandarimurgura</i> | ... | ... | shark. |
| <i>Budabudara</i> | ... | ... | a fish. |
| <i>Puliribuga</i> | ... | ... | " |
| <i>Win-ga</i> | ... | ... | " |
| <i>Bida-bida</i> | ... | ... | " |

A clan, the exact locality of which I could not determine, belonging to the Kaimera-Burung couple, had amongst its totems three species of snake called *kalunganara*, *bajamalu* and *ngamurgala*. I was also told of a *yungo talu* (rain totem) and of a *māngula talu* (baby totem) in the Ngaluma country, but I could not determine the clans to which these two totems belonged. I was told of a number of other totems each having its own ceremonial ground, without being able to determine the clans to which they belonged. Some of these were as follows:—

| | | | |
|------------------|-----|-----|---|
| <i>Ngaba</i> | ... | ... | a root. |
| <i>Kardang</i> | ... | ... | edible gum. |
| <i>Waramba</i> | ... | ... | a seed. |
| <i>Kandul</i> | ... | ... | a root. |
| <i>Koro</i> | ... | ... | a seed. |
| <i>Kulboro</i> | ... | ... | " |
| <i>Bilar</i> | ... | ... | " |
| <i>Bindanu</i> | ... | ... | " |
| <i>Magardu</i> | ... | ... | a fruit. |
| <i>Turguiñ</i> | ... | ... | " |
| <i>Madar</i> | ... | ... | a root. |
| <i>Bugaji</i> | ... | ... | " |
| <i>Marducari</i> | ... | ... | " |
| <i>Pauwira</i> | ... | ... | grass-seed (?). |
| <i>Mirganu</i> | ... | ... | the grass seeds collected and stored by a species of ant. |

The totemic ceremonies of this tribe have not been performed for many years and the younger men know very little about them. When the ceremony for producing cold weather was to be performed the men and women of the clan proceeded to the ceremonial ground. Here they painted themselves with white clay. Some of the men made a big break-wind of boughs and grass, and to one side of this a big fire was lighted. The break-wind was so placed that it would shelter the occupants from the south-east wind, which is the cold wind, even if at the time the wind was actually blowing from some other direction. The performers then sat round the fire within the break-wind or shelter and pretended to shiver with cold. After this the weather was sure to get colder in a few days. In some of the ceremonies connected with seed totems, a part of the ceremony consisted of grinding some of the particular seeds in the way in which they are usually prepared for food, and then scattering the flour in different directions, calling out the names of different parts of the country in which the performers wished the seeds to flourish and ripen. One of the totems of clan I was said to be "vomiting." I gathered from my informant that if this ceremony were performed the natives were seized with attacks of vomiting. Why this ceremony should ever be performed, unless perhaps as a means of annoying their neighbours, it is difficult to see.

Initiation Ceremonies.

When boys attain a certain age they are prohibited from eating emu and small kangaroos. At this period the boy is called *jajira*. When he is sufficiently grown he is sent away with five or six men, who are his *kaga* (mother's brother) or his *marganu* (brother-in-law), to collect friends from neighbouring camps to visit his father's camp. These men bring presents. The boy's journey seems only to have been a short one.

The ceremony on the boy's return consists of tying around each of his arms a band of fur-string. The boy is decorated with red paint, and a bunch of eagle-hawk feathers is fastened in his hair. A bullroarer (*banangari*) is given to him and he wears this fastened in his head-band at the back of his head. The arm is tied by a *marganu* (brother-in-law). The whole ceremony takes place at a cleared spot away from the camp. Women are present during some part of the ceremony but are prohibited from seeing other parts.

After this ceremony the boy is *bagali* and remains so for about a year, during which time the bands remain on his arms. At the end of this time he becomes *muruguru* and is free to marry. When married he is called *kumbungu*. When the youth ceases to be *bagali* and becomes *muruguru* he is again permitted to eat emu. A *kaja* (elder brother) takes some emu fat and rubs it on his face and then gives him emu flesh to eat.

The Ngaluma also scarify the chest with horizontal cuts, but this seems to be done in camp without any particular ceremony.

THE MARDUDHUNERA TRIBE.

The Mardudhunera tribe occupies the coast of Western Australia from a point somewhere between the Cane and Robe Rivers as far as the Maitland River. The tribe is adjoined by the Noala on the south-west, the Ngaluma on the north-east,

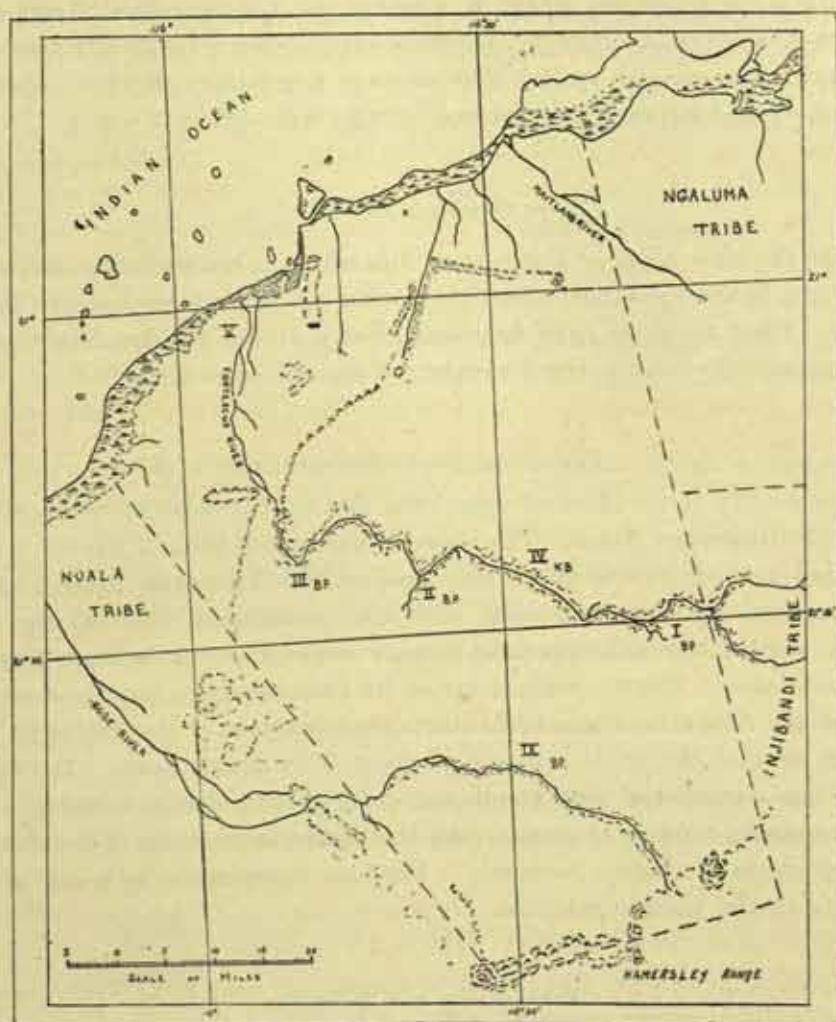


FIG. 3.—MAP OF THE MARDUDHUNERA TRIBE.

and the Injibandi or Korama on the south-east. No meaning has been discovered for the name Mardudhunera,¹ which is the name that members of the tribe apply to themselves. They speak of the Noala and Talainji tribes as Noanamaronga, and

¹ Many personal names in this tribe begin with the two syllables Mardu-, as Mardungaiana, Mardudhangulu, Mardumijering, Mardumaninya.

refer to the Injibandi or Korama tribe by the name Korama, or else include them under the general term Yanari, which they apply to all natives living inland.

Bibliography.

The tribe has not been described by any previous writer. It is referred to under the name *Maratunia* by Dr. E. Clement in "Ethnographical Notes on the Western-Australian Aborigines," *Internationales Archiv für Ethnographie*, Band xvi, 1903. The name is spelled *Mardathoni* in a pamphlet entitled "Aborigines of North-West Australia," by "Yabaroo," Perth, W.A., 1899.

Present Condition and Numbers.

Like the other tribes of this part of Australia, the Mardudhunera natives now mostly live on sheep stations, where they work for the whites and are fed and clothed. Their numbers have decreased greatly during the last fifty years, and there are probably not a hundred members of the tribe now alive.

Tribal and Local Organization.

The country of the Mardudhunera tribe lies on the coast, at the north-west end of the Hamersley Range. This range of mountains forms a barrier between the tribes on the Fortescue River and those on the Ashburton River, a distinct ethnographical boundary coinciding with the geographical one. At the north-western end the Mardudhunera tribe forms a connecting link between these two groups of tribes. Consequently some of its customs and institutions resemble those of the Ashburton tribes while others resemble those of the Fortescue tribes.

The area of the tribal territory is about 3500 square miles. The tribe is divided into a number of local groups each with its own defined country. There are no names for these local groups. In the accompanying map I have denoted them by means of Roman numerals. The local organization is in all respects similar to that of the Kariëra tribe.

Relationship and Marriage.

The Mardudhunera tribe is divided into four classes as shown in the following diagram¹ :—

$$\left. \begin{array}{l} \text{Banaka} = \text{Kaimera} \\ \text{Boongo} = \text{Paljeri} \end{array} \right\}$$

A comparison of this diagram with that given for the Ngaluma or Kariëra

¹ In the word *Boongo* there is a "w" glide between the two "o's"—*Bowongo*. This is the equivalent of the "r" in *Burong*.

tribe shows that while the names of the classes are similar, the arrangement is different. In the Ngaluma tribe the classes are arranged as follows:—

$$\left. \begin{array}{l} \text{Banaka} = \text{Burong} \\ \text{Kaimera} = \text{Paljeri} \end{array} \right\}$$

Thus in the Ngaluma tribe a man of the Banaka class marries a Burong woman, while in the Mardudhunera tribe a Banaka man marries a Kaimera woman. By means of genealogies showing inter-marriages between the two tribes it is possible to discover which are the equivalent classes. These are shown in the following table:—

| <i>Ngaluma.</i> | | <i>Mardudhunera.</i> | |
|-----------------|--------|----------------------|--|
| Banaka | ... .. | Paljeri. | |
| Burong | ... .. | Boongo. | |
| Kaimera | ... .. | Kaimera. | |
| Paljeri | ... .. | Banaka. | |

To put this in another way we may consider which classes in the two tribes may intermarry:—

| <i>Ngaluma.</i> | | <i>Mardudhunera.</i> |
|-----------------|---------|----------------------|
| Banaka | marries | Boongo. |
| Burong | " | Paljeri. |
| Kaimera | " | Banaka. |
| Paljeri | " | Kaimera. |

The system of relationship terms of the Mardudhunera tribe is very different from that of the Kariara, and is of a type common in many parts of Australia. The following is a list of the terms in use:—

Maiali.—Father's father M.F., father's father's brother M.F., son's son and daughter M.

Ngabari.—Father's mother M.F., father's mother's sister M.F., son's son and daughter F.

Tami.—Mother's father M.F., mother's father's brother M.F., father's mother's brother M.F., consort's father's father M.F., mother's father's sister M.F., daughter's son and daughter M.

Kandari.—Mother's mother M.F., mother's mother's sister M.F., father's father's sister M.F., consort's father's mother M.F., mother's mother's brother M.F., consort's mother's father M.F., daughter's son and daughter F., mother's mother's brother's son's son and daughter, mother's brother's son's wife

M.F., mother's brother's daughter's husband M.F., son's wife's mother M., etc.

Babu.—Father M.F., father's brother M.F., mother's sister's husband M.F.

Bebe.—Mother M.F., mother's sister M.F., father's brother's wife M.F.

Yaji.—Mother's brother M.F., father's sister's husband M.F., consort's father M.F.

Mogul.—Father's sister M.F., mother's brother's wife M.F.

Talyu.—Mother's mother's brother's son M., mother's father's sister's son M., mother's mother's brother's son's son's son M., mother's brother's daughter's son M., wife's mother's brother M., sister's daughter's husband M., etc.

Nganyi.—Mother's mother's brother's daughter M., mother's father's sister's daughter M., mother's brother's daughter's daughter M., mother's mother's brother's son's son's daughter M., wife's mother M., daughter's husband F., sister's son's wife M., husband's mother's brother F., etc. etc.

Kaia.—Older brother M.F., father's brother's or mother's sister's sons if older than the speaker.

Turdu.—Older sister M.F.

Paldha.—Younger brother M.F.

Mayi.—Younger sister M.F.

Ngadhal.—Mother's brother's son M., father's sister's son M., mother's brother's daughter F., father's sister's daughter F.

Bungali.—Mother's brother's daughter M., father's sister's daughter M., mother's brother's or father's sister's son F.

Yagan.—Mother's mother's brother's daughter's daughter M., mother's mother's brother's daughter's son F., mother's father's sister's daughter's daughter M., mother's father's sister's daughter's son F., wife M., husband F., wife's sister M., husband's brother F., brother's wife M., sister's husband F., sister's son's daughter M., father's mother's brother F.

Marianu.—Mother's mother's brother's daughter's son M., mother's father's sister's daughter's son M., wife's brother M., sister's husband M.

Mura.—Son M.F., brother's son M., sister's son F.

Kundal.—Daughter M.F., brother's daughter M., sister's daughter F.

Ngajela.—Sister's son and daughter M.

Kanainyu.—Mother's mother's brother's daughter's daughter F., mother's father's sister's daughter's daughter F., husband's sister F.

Yumani.—Father's father's father M.F., son's son's son M.

Yarugalu.—Mother's mother's mother M.F.

The system of relationship of the Mardudhunera tribe is a very complicated one to follow out in detail. The account here given is based entirely on examples from actual genealogies. If I am a man of the Banaka class my father is Palyeri, and is my *babu*. My father's brother is also *babu*, and my father's sister is *mogul*. My father's father belongs to the same class as myself and is my *maiali*. The brother of a *maiali* is also *maiali*, but the sister of a *maiali* is *kandari*. My father's mother is Kaimera and is my *ngabari*. Her sister is also my *ngabari*, while her brother is my *tami*.

My mother is my *bebe*, and I apply the same term to her sister or to the wife of my father's brother. My mother's brother is my *yaji*, and I apply this term also to the husband of my father's sister. My mother's father is my *tami*. The brother and the sister of this man are also my *tami*. My mother's mother is my *kandari*, and the same name applies to her sister and to her brother.

It thus appears that in the second ascending generation I have three names for male relatives (*maiali*, *tami* and *kandari*) and the same number for female relatives (*ngabari*, *kandari* and *tami*).

If we consider the children of these relatives, those of my *maiali* are my *babu* and my *mogul*. Those of my male *tami* are my *yaji* and *bebe*, and those of my male *kandari* are my *talyu* (male) and my *nganyi* (female). Thus in the first ascending generation also I have three terms for male relatives (*babu*, *yaji* and *talyu*) and the same number for female relatives (*mogul*, *bebe* and *nganyi*).

In my own generation the children of my *babu* and my *bebe*, that is, my brothers and sisters and the sons and daughters of my father's brothers or of my mother's sisters, are my *kaia* (elder brother), my *turdu* (elder sister), my *paldha* (younger brother) or my *mayi* (younger sister), according as they are older or younger than myself. The children of my *talyu* are my *kandari*, male and female. The son and daughter of my *mogul* (father's sister) are my *ngadhal* and my *bungali*, while the son and daughter of my *nganyi* are my *marianu* and my *yagan*. It is to be noted that the wife of my *babu* and the wife of my *talyu* are both equally my *bebe*, but in the one case the children are my brothers and sisters, and in the other they are my *kandari*. Similarly, my *mogul* and my *nganyi* both marry men whom I call *yaji*, but in one case the children are my *ngadhal* and *bungali*, while in the other they are my *marianu* and *yagan*. Thus in my own generation I have four names for male relatives, exclusive of the distinction of older and younger brothers (*kaia* or *paldha*, *ngadhal*, *marianu* and *kandari*), and four names for female relatives (*turdu* or *mayi*, *bungali*, *yagan* and *kandari*). The most interesting feature here is that the same term *kandari* is applied to the children of a *talyu* as to the father of a *talyu*. My *kandari* and my brothers and sisters belong to the same class as myself, Banaka. My *marianu*, *yagan*, *ngadhal* and *bungali* belong to the class Kaimera, from which I must take my wife. By the rule of the tribe I am not allowed to marry any woman who is my *bungali*, but may only marry a *yagan*, that is, the daughter of a *nganyi*, and not the daughter of a *mogul*.

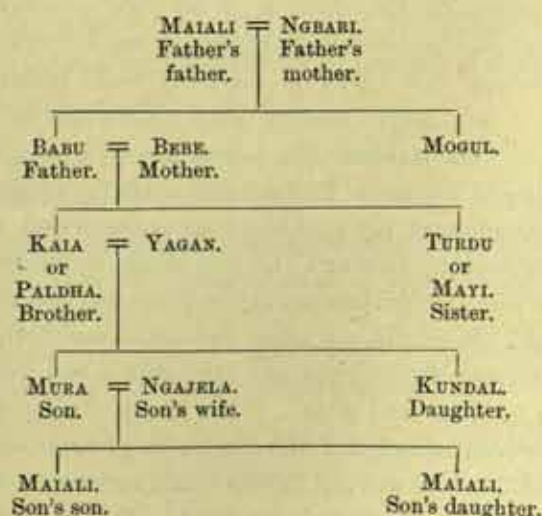
In the first descending generation my own children are my *mura* (son) and *kundal*

(daughter). I apply the same names to the children of any woman whom I call *yagan*, whether she marries a man who is my *kaia* or *paldha*, or one who is my *kandari*. My *bungali* (mother's brother's daughter), as a rule, marries a man who is my *kandari*, and their children are my *talyu* and *nganyi*. The children of my *turdu* or *mayi* (sister), or of my female *kandari*, who are at the same time the children of my *ngadhal* and my *marianu*, are my *ngajela*, male and female.

In the second descending generation the children of my *mura* (son) are my *maiali*, male and female, and the children of my *kundal* (daughter) are my *tami*, male and female.

The system may be more clearly understood by reference to the accompanying genealogical tables, which show all the different relatives of a male. Table I shows the direct male line. It starts from my *maiali* (father's father) and his wife. The children of this pair are my *babu* (father) and *mogul* (father's sister). My *babu* marries my *bebe* and their children are my *kaia* or *paldha* (brother) and my *turdu* or *mayi* (sister). The children of my *kaia* or *paldha* are my *mura* and *kundal* (son and daughter), and the children of my *mura* are my *maiali* (son's son and daughter).

TABLE I.



In Table II we start from a pair who are my *tami* and *kandari*, but who are the *yaji* and *nganyi* of my *babu*. The son of these two is my *yaji* and marries my *mogul* (father's sister). The children of these latter are my *ngadhal* and *bungali*. The children of my *ngadhal* are my *ngajela*, and they call me *yaji*. My male *ngajela* marries my *kundal* (daughter) and their offspring are my *tami* (daughter's son and daughter).

TABLE II.

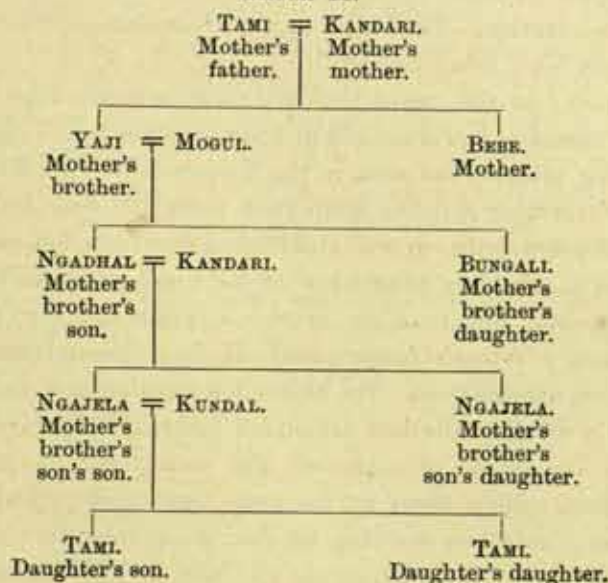
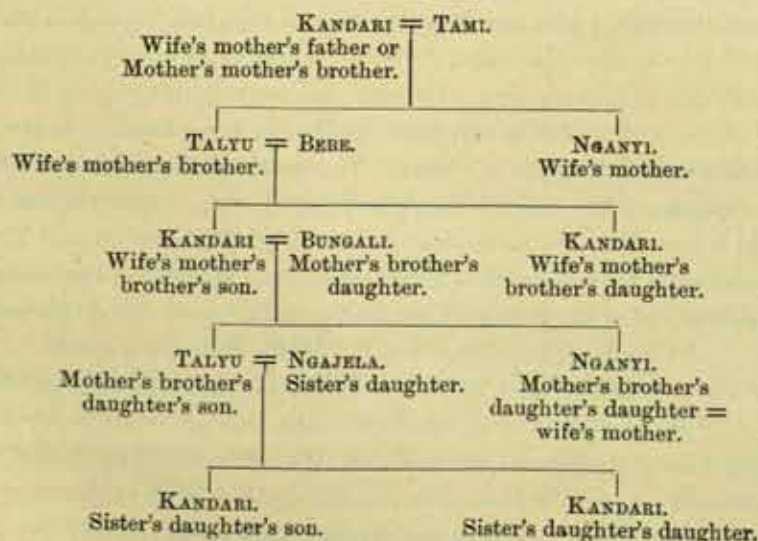


Table III starts from my *kandari* (mother's mother's brother) and his wife, who is my *tami* (mother's father's sister). The children of this pair are my *talyu* and *nganyi*. My *talyu* marries a woman who is my *bebe* and their offspring in turn are my *kandari*, male and female. My male *kandari* in my own generation marries a woman who is my *bungali* and their children are my *talyu* and *nganyi*. My *talyu* in the first descending generation marries my sister's daughter (*ngajela*) and their children are my *kandari*, male and female. The peculiarity of this table as compared with I and II is obvious. In Tables I and II the same term (*mai* or *tami*) recurs after four generations. In Table III the same term recurs every

TABLE III.



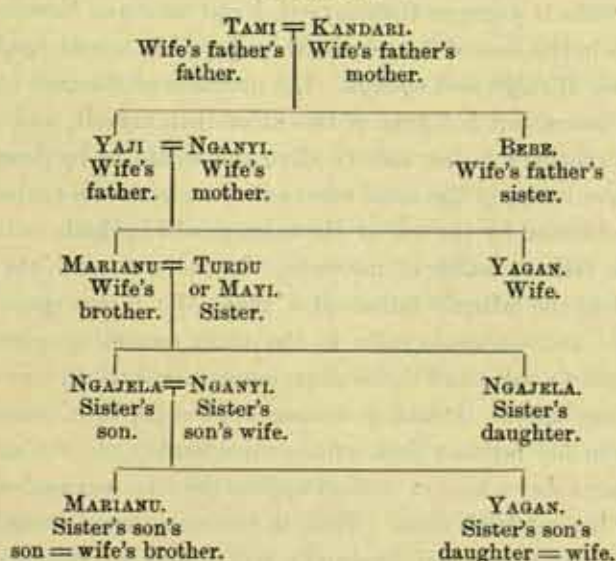
alternate generation. Thus in the direct male line the two terms *kandari* and *talyu* alternate with one another. The son of my male *kandari* is in all cases my *talyu*, and the son of my *talyu* is my *kandari*.

This peculiarity in the use of the terms *kandari* and *talyu* deserves a brief comment. The term *kandari* is applied to a mother's mother. This is, at the same time, the meaning given to the term in the Kariëra tribe. In the Kariëra tribe a mother's mother's brother is called *maeli* (this being the term for father's father). In the Mardudhunera tribe, on the other hand, the term for mother's mother's brother is *kandari*, one term being thus used for both male and female relatives. This is a fundamental feature of the system, a mother's mother's brother being distinguished from a father's father's and all their descendants being equally distinguished from one another. The terms for grandparents and grandchildren being reciprocal a woman calls her daughter's children *kandari*, since she is their mother's mother (*kandari*). A man uses the same term to denote his sister's daughter's children, calling them by the same term that they apply to him. It thus follows that a man uses the term *kandari*, as applying to men and women of the same generation as his grandparents, and also to both males and females of the same generation as his grandchildren. In the Kariëra system, while a man applies the term *kandari* only to women of the generation of his grandparents it is only a woman who applies the same term to persons (both male and female) of the generation of her grandchildren. Thus in the Kariëra tribe a man has only female *kandari*, while a woman has both male and female *kandari*. In the Mardudhunera system a man applies the term *talyu* to his mother's mother's brother's son, who is thus distinguished from a father's father's son (*babu*). The peculiarity about this term *talyu* is that, unlike the terms *babu* (father) and *yaji* (mother's brother), it is reciprocal. While my *babu* calls me *mura* and my *yaji* calls me *ngajela*, my *talyu* (mother's mother's brother's son) calls me *talyu*. Thus a man applies the same term to men of the generation of his parents, and also to men of the generation of his children. Now the father of a man's senior *talyu* is that man's *kandari* (mother's mother's brother). On the other hand, the son of a man's junior *talyu* is that man's *kandari* also (sister's daughter's son). By what is a very simple step in the logical development of the system a man therefore applies the term *kandari* to the father and also to the son of any *talyu* whatever. The result of this is that the term is applied to the father of his junior *talyu*, who is at the same time the son of his senior *talyu*, in other words, to his mother's mother's brother's son's son. The term *kandari* thus comes to be applied by a man to men (and women) of the generations of his grandparents and of his grandchildren and also to men of his own generation. This is a feature of very great importance in the Mardudhunera system.

Table IV starts from the same pair of relatives as Table II, but in the first ascending generation my *yaji* in this case marries a woman who is my *nganyi*, belonging to the line of descent shown in Table III. The children of this *nganyi* are my *marianu* and *yagan*. My *marianu* marries my sister (*turdu* or *mayi*) and their children are my *ngajela*. Just as my sister's daughter marries my *talyu*, so my

sister's son marries my *nganyi* (from Table III), and the children of this pair are my *marianu* and *yagan*. The peculiarity of this table lies in the second descending generation where my sister's son's son and daughter are given the same names as my brother-in-law and my wife. This is due to the fact that the children of a *nganyi* are in all cases *marianu* and *yagan*, just as the children of a *talyu* (the brother of a *nganyi*) are always *kandari*.

TABLE IV.

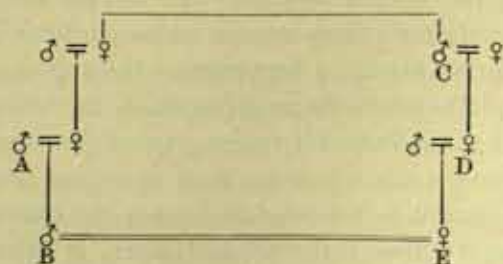


The above is what we may speak of as the general basis of the system. In actual practice certain modifications have to be taken into account. In Table I my *maiali* is shown as marrying my *ngabari*. But in some cases it may happen that a man who is my *maiali* by genealogy may have married a woman who is my *tami*. Now the children of a *maiali* are *babu* and *mogul*, while the children of a female *tami* are *talyu* and *nganyi*. Where a *maiali* has married a *tami* the natives speak of the son of this pair as "half *babu* half *talyu*" and the daughter as "half *mogul* half *nganyi*." Exactly the same thing occurs if a male *kandari* (Table III) marries a *ngabari*, instead of a female *tami*. I found two or three such cases in the genealogies that I studied. The same thing may happen in the contemporary generation. Thus my *bungali*, as shown in Table III, marries my male *kandari*. It may happen, however, that she marries a man who is my *kaia* or *paldha* (brother). In such a case the son of this pair will be my *talyu*, if I trace the relationship through his mother, and my *mura*, if I trace it through his father; in other words, he will be half *mura* half *talyu* to me, and in the same way the daughter will be half *kundal* half *nganyi*. These indeterminate relationships are very interesting. In practice it always happens that a choice is made between the two alternative relationships, but the principles that guide this choice are not at all clear. In one case a man's male *kandari* had married a woman who was the man's *ngabari* and had five

children, three sons and two daughters. The man, in giving me the terms of relationship, called the two oldest brothers *babu*, while he called the other brother *talyu*, and he called the two sisters *nganyi*. He was unable to explain why he differentiated between them, and said that the men in question were all of them really half *babu* half *talyu*.

The other modification of the system as described above is due to the fact that a man who is by genealogy my *mura* (son) may be actually older than myself, and in that case I must call him not *mura* but *babu*. Inversely, if a man who by genealogy is my *babu* is younger than myself, I call him not *babu* but *mura*. The same thing occurs in the case of the relationships *yaji*, *bebe*, *mogul*, *ngajela* and *kundal*, but not in the case of *talyu* and *nganyi*. Let us examine the case of a man who is by genealogy my *mura*, but is a year or two older than myself, and is therefore my *babu*. This man's father's father may be alive and would be by genealogy my *babu*. Thus I should have to apply the same term *babu* to a man and to this man's father's father. This is obviated by the use of the term *yumani*, which in this case would be applied to the father's father of my *babu*. In the same way the term *yarugalu* would be applied to the father's father of a man who is my *yaji*. These terms therefore, *yumani* and *yarugalu*, refer to the third ascending generation, and, in their reciprocal use, to the third descending generation. Both terms, however, are also used in a looser sense. A man or woman applies the term *yumani* to any man or woman of his or her father's class who is considerably older than the speaker's father. In the same way a man or woman applies the term *yarugalu* to old men and women of his or her mother's class. Thus, in one case that I examined, a woman applied the term *yarugalu* to her husband's father and his sister. The father of this *yarugalu* she called *tami*, and the mother *kandari*. In another case a man applied the term *yumani* to his own mother's father's sister's son.

The marriage law of the Mardudhunera tribe is very simple. A man may marry a woman who is his *yagan*, that is, the daughter of his *nganyi*, the daughter's daughter of his male *kandari*. He may not marry any woman who does not bear this relation to him. Marriages are arranged before children are born. Let us



take the case of a newly married man, whom we may call A, who has as yet no children. A man C, who is the *talyu* (wife's mother's brother) of A, has a daughter born to him, whom we may call D. It is arranged that this girl D shall be the

nganyi (wife's mother) of the first son born to A. When A has a son born to him this son B is told that the woman D is his *nganyi*, the man C being his *kandari*. The woman D grows up and marries and has a daughter E, who is by betrothal the wife of B. He keeps his claim alive by visiting the father of the girl, that is, the husband of his *nganyi*, and by making him presents. On one occasion I acted as messenger and took some presents from a man about twenty to his prospective father-in-law. The daughter who was to become the young man's wife was at that time about seven or eight years old. He would therefore not be able to marry her for six or seven years. Every boy is made *nganyi* to several women so that he may have the better chance of ultimately obtaining a wife. But of all these there is generally one who is specially marked out. To the daughter of this woman he has the first right, while to the daughters of other *nganyi* he has only a secondary right, some other man having the first right in each case. A man's own *nganyi*, that is the woman to whose daughter he has the first right, is often the daughter of his own father's own *talyu* (wife's mother's brother). That is to say, a man's own *nganyi* is the daughter of his mother's mother's brother. In other cases a man A and his wife may ask the woman's father's sister (*mogul*), who is the man's *bebe*, to promise her daughter as the *nganyi* of the yet unborn son of A and his wife. In this case a man's *nganyi* is the daughter of his mother's father's sister.

A man must carefully avoid all social contact with any woman who is his *nganyi*. There is no such avoidance in the case of a *mogul*. The daughter of a man's *mogul* is his *bungali* and he cannot marry her.

Whenever a man is made *nganyi* to a woman his mother is at the same time made *nganyi* to this woman's son. Thus we have two women, A and B, who are *ngadhal* to each other, each of whom is *nganyi* to the son of the other. The son of A then marries the daughter of B, and inversely the son of B marries the daughter of A. That is, there is exchange of sisters.

The mother's brother of a girl occupies an important position. If there are several claimants for his sister's daughter it is often he who decides which shall be the favoured one. This man is the *talyu* of the girl's future husband. If a man wishes to obtain a girl in marriage he must therefore pay his attentions not only to the girl's father (his *yaji*), but also to her mother's brother (his *talyu*).

In many tribes of Western Australia in which the system of relationship is similar to that of the Mardudhunera, I found that irregular marriages (that is, marriage of a man with a woman who is not his legal wife) occurred in fair numbers as far back as I was able to trace the genealogical record, that is, some time before the country was occupied by the whites. In the Mardudhunera tribe the only irregular marriages that I found had all occurred recently, and there were very few of those. In the old days, before the occupation of their country, irregular marriages were not permitted and did not occur.

A consideration of the Mardudhunera system of relationship shows that if that system were used consistently throughout it would result in the division of the tribe into eight sub-classes similar to those of the Warramunga and other tribes.

MARDUDHUNERA TRIBE.

| | PALJERI. | | BANAKA. | | BOONGO. | | KAIMERA. | |
|------------------------------|--|--|---|---|---|--|--|--|
| | a | β | a | β | β | a | β | a |
| Third generation ascending | YUMANI (Father's father's father) <i>Yumani</i> | YUMANI <i>Yumani</i> | — | — | YARUGALU <i>Yarugalu</i> (Mother's mother's mother) | YARUGALU <i>Yarugalu</i> | — | — |
| Second generation ascending | — | — | KANDARI (Mother's mother's brother) <i>Kandari</i> (Mother's mother) | MAIALI (Father's father) <i>Kandari</i> (Father's father's sister) | — | — | TAMI (Mother's father) <i>Tami</i> (Mother's father's sister) | TAMI (Father's mother's brother) <i>Ngabari</i> (Father's mother) |
| First generation ascending | BADU (Father) <i>Mogul</i> (Father's sister) | TALYU (Wife's mother's brother) <i>Nganyi</i> (Wife's mother) | — | — | YAH (Mother's brother) <i>Bebe</i> (Mother) | YAH (Wife's father) <i>Bebe</i> (Wife's father's sister) | — | — |
| Contemporary generation | — | — | KANDARI (Mother's brother's daughter's husband) <i>Kandari</i> (Mother's brother's son's wife) | EGO ♂ KAIA (older brother) PALDHA (younger ") <i>Turdu</i> (older sister) <i>Magi</i> (younger ") | — | — | NGADHAL (Mother's brother's son) <i>Bungali</i> (Mother's brother's daughter) | MARIANU (Wife's brother) <i>Yogan</i> (Wife) |
| First generation descending | MURA (Son) <i>Kudal</i> (Daughter) | TALYU (Sister's daughter's husband) <i>Nganyi</i> (Sister's son's wife) | — | — | NGAJELA (Daughter's husband) <i>Ngajela</i> (Son's wife) | NGAJELA (Sister's son) <i>Ngajela</i> (Sister's daughter) | — | — |
| Second generation descending | — | — | KANDARI <i>Kandari</i> | MAIALI (Son's son) <i>Maiali</i> (Son's daughter) | — | — | TAMI (Daughter's son) <i>Tami</i> (Daughter's daughter) | MARIANU <i>Yogan</i> |
| Third generation descending | YUMANI (Son's son's son) <i>Yumani</i> (Son's son's daughter) | YUMANI <i>Yumani</i> | — | — | YARUGALU <i>Yarugalu</i> | YARUGALU <i>Yarugalu</i> | — | — |

ARUNTA TRIBE.

| | Panunga. | Uknaria. | Bulthara. | Appungerta. | Porula. | Ungalla. | Kunara. | Umbitjana. |
|----------------------------|---|---|--|---|---|--|--|---|
| Grandparents' Generation | — | — | IPMUNNA (Wife's mother's father) <i>Ipmunna</i> (Mother's mother) | ARUNGA (Father's father) ? | — | — | TJIMMIA (Mother's father) ? | ? |
| Parents' Generation | OKNIA (Father) <i>Ucinna</i> (Father's sister) | MURA (Wife's mother's brother) <i>Mura</i> (Wife's mother) | — | — | GAMMONA (Mother's brother) <i>Mia</i> (Mother) | IKUNTERA (Wife's father) ? | — | — |
| Contemporary Generation | — | — | IPMUNNA (Father's sister's daughter's husband) <i>Ipmunna</i> (Son's wife's mother) | EGO ♂ OKILIA (older brother) ITIA (younger brother) <i>Unquraitcha</i> (older sister) <i>Itia</i> (younger sister) | — | — | USKULLA (Father's sister's son) <i>Unkulla</i> (Father's sister's daughter) | UMBIENA (Wife's brother) <i>Unara</i> (Wife) |
| Children's Generation | ALLIRA (Son) <i>Allira</i> (Daughter) | ? ? | — | — | ? <i>Gammona</i> (Son's wife) | UMBA (Sister's son) <i>Umba</i> (Sister's daughter) | — | — |
| Grandchildren's Generation | — | — | ? ? | ARUNGA (Son's son) ? | — | — | TJIMMIA (Daughter's son) <i>Tjimmia</i> (Daughter's daughter) | ? ? |

of Central and Northern Australia. In order to make this clear to the reader I have made out the accompanying table of Mardudhunera terms, which may be compared with the similar table for the Arunta tribe reproduced from Messrs. Spencer and Gillen's "Northern Tribes of Central Australia." In these tables the terms for male relatives are printed in capitals, while those for female relatives are printed in italics.

The only way in which the Mardudhunera system differs from the systems of Central Australia is that the former is not used consistently throughout. For example, suppose I call B my *kaia* and C my *babu*. Then if the system were used consistently B would also call C *babu*. But there actually occur cases where B calls C not *babu* but *talyu*. It is for this reason and this alone that the Mardudhunera system differs from that of such tribes as the Warramunga.

It now remains to consider the connection of the relationship system with the local organization. In the Mardudhunera tribe, just as in the Kariara, the members of one local group belong to only one couple of classes. One local group contains only Banaka and Paljeri men and women, while another contains only Kaimera and Boongo. On the accompanying map, beneath the number denoting each local group, the letters BP and KB show to which couple the group belongs.

In the case of the Mardudhunera tribe another problem arises. In the Kariara tribe one couple contains only one line of descent. In the Mardudhunera tribe each couple includes two lines of descent, as below:—

| | |
|---|---|
| <i>Maiali</i> , father's father. | <i>Kandari</i> , mother's mother's brother. |
| | |
| <i>Babu</i> , father. | <i>Talyu</i> . |
| | |
| <i>Kaia</i> or <i>paldha</i> , brother. | <i>Kandari</i> . |
| | |
| <i>Mura</i> , son. | <i>Talyu</i> . |
| | |
| <i>Maiali</i> , son's son. | <i>Kandari</i> . |

The question of interest therefore is, "Does a man's own local group contain only men who are his *maiali*, *babu*, *kaia*, *paldha* and *mura*, or does it also, in some cases, include men who are his *kandari* or *talyu*?" Unfortunately, I was not able to determine definitely which of these alternatives actually obtains. So far as my information went, I did not find a single case in which a man's local group included men who were his *kandari* or *talyu*; but the genealogical information that I collected was not sufficiently extensive to permit me to state that this is really so in all cases. However, while I cannot speak definitely, I think it is probable that a man's own local group includes only his relatives in the direct male line, that is, his *maiali*, *babu*, *kaia*, *paldha* and *mura*. In other words, the Mardudhunera local group is a simple clan with male descent. I much regret that I am not able to speak more definitely on a point which is possibly of fundamental importance in connection with the origin of this type of relationship system.

It is obvious from the above account that a man cannot marry a woman of his own, that is, his father's, clan or local group. A point of considerable interest is whether he can marry a woman of the same clan, and therefore of the same totem, as his own mother. In the few genealogies that I was able to collect, I found one case in which a man had married his mother's father's brother's son's daughter, who, of course, belonged to the clan of his own mother. This one case may have been an exception, but I think it is probable that there is no special law prohibiting a man from marrying into his mother's clan.

Totemism.

The totemism of the Mardudhunera tribe is similar to that of the Kariera. Each local clan has a number of totems that are transmitted from father to son. The members of the group perform ceremonies, called *talū*, for the purpose of increasing the totem, but there is no objection to a man eating or killing any of his totems.

The following is a brief list of some of the totems of some of the clans of this tribe¹ :—

I.—Pulamba clan (Banaka-Paljeri).

| | | |
|--|--------|---------------------|
| <i>Manjeriwura</i> or <i>manjidiwura</i> | ... | monitor lizard. |
| <i>Waneriya</i> | ... .. | a bird. |
| <i>Mardera</i> | ... .. | an edible root. |
| <i>Kanguriya</i> or <i>ngalirmara</i> | ... .. | a fresh-water fish. |

II.—Chanjara clan (Banaka-Paljeri).

| | | |
|------------------|--------|--------------------------------|
| <i>Wanda</i> | ... .. | devil or evil spirit. |
| <i>Walambari</i> | ... .. | opposum. |
| <i>Buluca</i> | ... .. | the white-tailed spinifex rat. |
| <i>Mulyaru</i> | ... .. | a snake. |
| <i>Biriu</i> | ... .. | spinifex lizard. |
| <i>Kardangu</i> | ... .. | edible gum. |
| <i>Walgyuru</i> | ... .. | a bush with edible fruit. |
| <i>Warari</i> | ... .. | common fly. |
| <i>Janungu</i> | ... .. | a grub. |

¹ In this list, names have been given to the different clans (local groups) in order to distinguish them. In each case the name is that of some important camping place in the country of the clan. The natives themselves have no distinctive names either for the clan or for the whole of its country.

III.—Bulandurwa clan (Banaka-Paljeri).

| | | | | |
|-------------------|-----|-----|-----|------------------|
| <i>Milyangura</i> | ... | ... | ... | a long red fish. |
| <i>Yarucara</i> | ... | ... | ... | a small fish. |
| <i>Kuringja</i> | ... | ... | ... | March fly. |

IV.—Mandamalu clan (Kaimera-Boongo).

| | | | | |
|-----------------------------|-----|-----|-----|-----------------|
| <i>Kudeno</i> | ... | ... | ... | magical power. |
| <i>Mayi</i> or <i>Wanja</i> | ... | ... | ... | dingo. |
| <i>Kalaidu</i> | ... | ... | ... | swan. |
| <i>Ngarandi</i> | ... | ... | ... | duck. |
| <i>Wilinja</i> | ... | ... | ... | white cockatoo. |
| <i>Wilulu</i> | ... | ... | ... | curlew. |
| <i>Kolu</i> | ... | ... | ... | a bird. |
| <i>Balgunji</i> | ... | ... | ... | a snake. |

V.—Jiwural clan (Kaimera-Boongo).

| | | | | |
|--------------------------------|-----|-----|-----|---------|
| <i>Jiwura</i> or <i>Jigura</i> | ... | ... | ... | a fish. |
|--------------------------------|-----|-----|-----|---------|

VI.—Munguji clan (Banaka-Paljeri).

| | | | | |
|-----------------------------|-----|-----|-----|---------------|
| <i>Mudu</i> or <i>Ngudu</i> | ... | ... | ... | cold weather. |
|-----------------------------|-----|-----|-----|---------------|

VII.—Yaliangu clan (Kaimera-Boongo).

| | | | | |
|--------------|-----|-----|-----|-----|
| <i>Banga</i> | ... | ... | ... | (?) |
|--------------|-----|-----|-----|-----|

VIII.—Mulala clan (Banaka-Paljeri).

| | | | | |
|--------------------|-----|-----|-----|--------|
| <i>Ngogura</i> | ... | ... | ... | (?) |
| <i>Mungeramara</i> | ... | ... | ... | honey. |

IX.—Chalyianu clan (Banaka-Paljeri).

| | | | | |
|-----------------|-----|-----|-----|-----------------|
| <i>Changuna</i> | ... | ... | ... | emu. |
| <i>Wongada</i> | ... | ... | ... | an edible root. |

NOTE ON SYSTEMS OF RELATIONSHIP IN AUSTRALIA.

In all the Australian tribes about which we have detailed information marriage is regulated by relationship. In all tribes a man may only marry women who stand to him in a certain relation of consanguinity. There are two different forms of marriage law, which I propose to speak of as Type I and Type II. The Kariara tribe is an example of Type I, while the Mardudhunera tribe is an example of

Type II. In tribes with a marriage law of Type I, a man marries the daughter of his mother's brother, or some woman who stands to him in an equivalent relation. Where the marriage law is of Type II, a man marries his mother's mother's brother's daughter's daughter, or some woman who stands to him in an equivalent relation. I have found the marriage law of Type I amongst a number of tribes on the Fortescue and De Grey Rivers in Western Australia. It is reported by Messrs. Spencer and Gillen for the Urabunna tribe near Lake Eyre, with a peculiar modification whereby a man may only marry the daughter of his mother's elder brother. According to the late Mr. Howitt, the marriage rule of Type I was found in the Wolgal and Ngarigo tribes of the Upper Murray River. The Rev. John Mathew (in *Two Representative Tribes of Queensland*, p. 157) states that the same form of marriage is found in the Kabi and Wakka tribes of Queensland, but the list of terms of relationship given by the same author suggests that the Kabi marriage system is really of Type II, so that, till further information is forthcoming, we must regard this case as doubtful. If I interpret rightly a very difficult passage by Dr. Basedow in the *Trans. Roy. Soc. South Australia*, vol. xxxi, p. 4, the Larakia tribe of Port Darwin also has a marriage law of Type I.

I have found a marriage law of Type II in a number of tribes of Western Australia, including the Mardudhunera. The same type is described by Messrs. Spencer and Gillen as existing in all the tribes studied by them in the Northern Territory from the Mara and Anula in the North to the Arunta and Luritja in the South. Howitt's description of the Dieri tribe shows that there also the marriage is of Type II. According to Mr. R. H. Mathews this type is found in most of the tribes of New South Wales and Victoria. It seems probable from the description of the tribes of Western Queensland by Dr. W. E. Roth that they also have a marriage law of Type II.

The only tribes in which a different form of marriage law has been observed are the Kurnai tribes as described by Howitt. Our knowledge of these tribes, however, is very incomplete and unsatisfactory. Mr. R. H. Mathews states that the Brabirrawulung tribe (one of the Kurnai tribes) has a marriage law of Type II (*Journ. Roy. Soc. New South Wales*, vol. xxxiv, pp. 263-4).

We may say, therefore, that we know of only two forms of regulation of marriage in Australia, and of these two Type II is very much more widespread than Type I.

Corresponding to each type of marriage rule there is a type of relationship system. We may take as the characteristic feature of systems of Type I the fact that the term for "mother's mother's brother" is the same as that for "father's father." Except for the Kariara and Ngaluma systems, described by myself, the only other system of this type about which we have any information is that of the Urabunna tribe, described by Messrs. Spencer and Gillen.

The characteristic feature of Type II is that the term for "mother's mother's brother" is different from that for "father's father," and is, in many cases, the same as that for "mother's mother." Besides the Mardudhunera system, the following

systems of Type II have been described, though in some cases only imperfectly—the Arunta, Luritcha, Kaitish, Warramunga, Worgaia, Umbaia, Tjingilli, Binbinga, Mara, and Anula, described by Messrs. Spencer and Gillen; the Dieri, described by Mr. Howitt; the Narrinyeri, described by the Rev. C. Taplin; the Wathi-wathi, described by A. L. P. Cameron in the *Journ. Anthr. Inst.*, vol. xiv, p. 354; the Pitta-pitta and other tribes, described by Dr. W. E. Roth; and the Chaap-wuurong and Kuurn-kopan-noot tribes, described by James Dawson.

In some of the systems of Type II there is one feature of such extreme importance that I propose to use it in order to define what I will call Variety (a) of Type II. This distinguishing feature of the Variety (a) is that one term of relationship is applied to a "mother's mother," and also to a "mother's mother's brother's son's daughter," and one term (in most cases the same as that for "mother's mother") is applied to a "mother's mother's brother," and to a "mother's mother's brother's son's son." The result of this peculiar feature is that amongst the women a man may marry are his "mother's mother's brother's son's son's daughter's daughter." In tribes with a system of Type I women of that relationship would be forbidden in marriage. The distinguishing feature of Variety (a) of Type II has been observed by myself in many tribes of Western Australia, including the Mardudhunera. It is also recorded by Messrs. Spencer and Gillen amongst the following tribes of the Northern Territory—Arunta, Tjingilli, Warramunga, Binbinga, Worgaia, Umbaia, Mara, and Anula. With regard to most of the tribes with relationship systems of Type II, we have no information whether the distinctive feature of Variety (a) is present or absent. In only one case, that of the Narrinyeri, have we any evidence that it is absent, and even in that case the matter is not quite certain. It may perhaps seem unnecessary to thus distinguish a separate variety when it has not been definitely ascertained that any other variety of the same type exists. It is, however, quite conceivable that a system of Type II (with marriage with a mother's mother's brother's daughter's daughter) might exist without this particular feature. It is probable indeed that there is such a system in the Narrinyeri tribe. Further, the Dieri system, while probably possessing the peculiar feature of Variety (a) possesses another feature of somewhat the same kind which is absent in the other systems here referred to (namely the use of one term for mother's father and for mother's brother's son). If this feature should be found in any other tribes besides the Dieri, it will be convenient to distinguish such systems as forming a separate variety of Type II.

I hope shortly to publish a detailed account of the marriage laws and relationship systems of Australian tribes. Meanwhile, it may be worth while to point out one important fact which is often overlooked by writers anxious to expound theories, that is, that the marriage laws of Australian tribes are not in any way whatever affected by the existence in the tribe of two or four named divisions. Amongst tribes with two named divisions, we find Type I in the Urabunna tribe and Type II in the Dieri, Wathi-wathi and Chaap-wuurong tribes. Amongst tribes with four named divisions, we find Type I in the Kariara and other

tribes, and Type II in the Mardudhunera, Luritcha and Pitta-pitta tribes, and probably in most of the tribes of New South Wales. We also find Type II in such a tribe as the Narrinyeri, which has no named divisions. Finally, even the existence of eight named divisions is not a feature on which we can lay much stress in classifying Australian tribes. It is true that wherever there are eight sub-classes the marriage must be of Type II, but exactly the same marriage rule, and an exactly similar system of relationship, may be found in tribes in which the

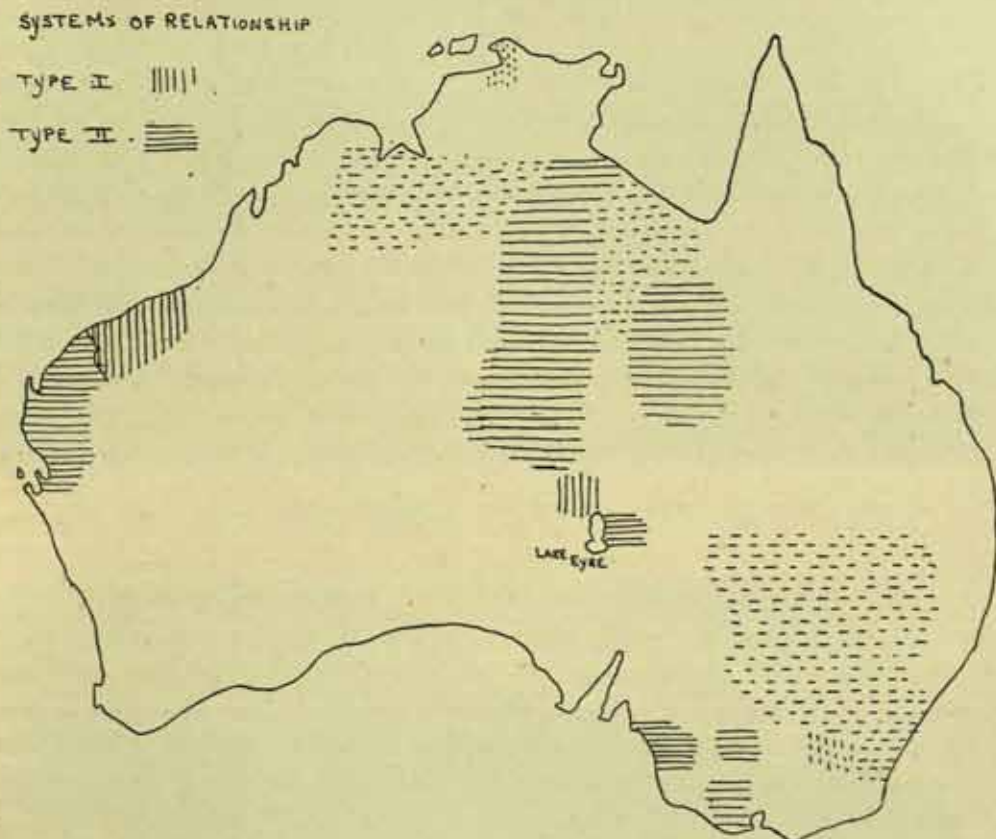


FIG. 4.—SKETCH-MAP OF AUSTRALIA SHOWING DISTRIBUTION OF THE TWO TYPES OF RELATIONSHIP SYSTEM.

eight sub-classes are not named. The fact that a tribe has two or four named divisions tells us nothing whatever about the marriage law of the tribe, which can only be ascertained by a careful study of the system of relationship.

It may also be worth while to note, in connection with the theory that the prohibition of the marriage of first cousins (and the origin of the relationship system of Type II) is due to the change from maternal to paternal descent¹ of the totem,¹ that in the Kariara tribe, Type I (with the marriage of first cousins), exists together with paternal descent of the totem, and that in many tribes of New

¹ Professor Durkheim. *Année Sociologique*, vol. viii.

South Wales and Victoria, Type II exists together with maternal descent of the totem. The theory is therefore not supported by the facts.

The accompanying sketch-map of Australia shows the distribution of the two types of relationship system so far as it is at present known. Where the marriage rule has been reported, but where at the same time we have no detailed information about the terms of relationship, the two types are marked by means of dotted lines.

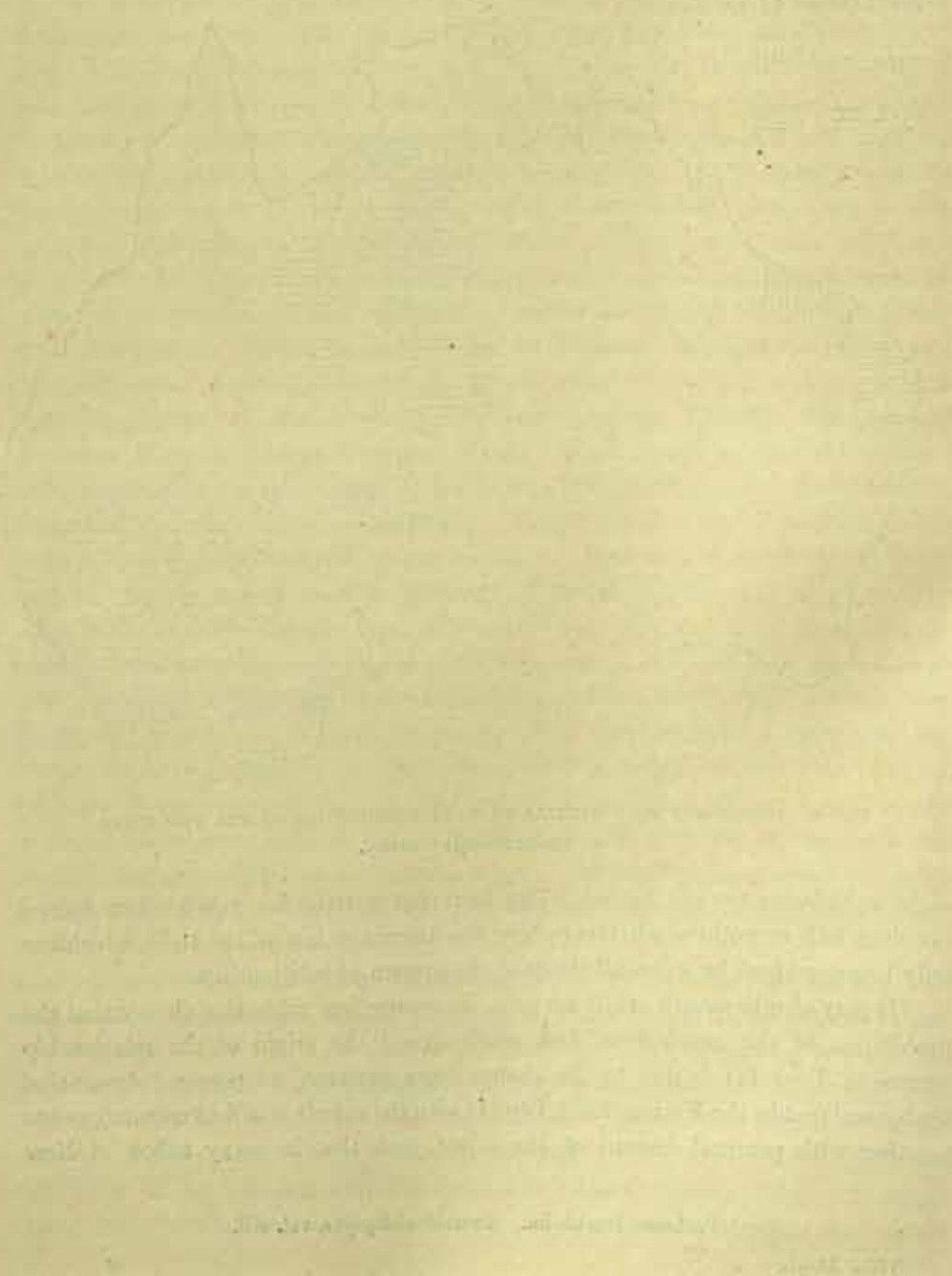




FIG. 1.—TABU (TOTEM CENTRE) OF THE KURINJA (MARCH FLY) TOTEM, KARIERA TRIBE.



FIG. 2.—TABU (TOTEM CENTRE) OF THE PIDIRA (COCKATOO) TOTEM, KARIERA TRIBE.

NOTE ON A SERIES OF PHYSICAL MEASUREMENTS FROM EAST AFRICA.

BY NORMAN M. LEYS, M.B., AND T. A. JOYCE, M.A.

THE measurements which form the subject of this paper were procured mainly at the town surgery, Mombasa, from sick who came for advice. At first only three measurements were taken on each subject, head-length, head-breadth and stature. Later the nasal measurements were included. Great care was taken in classifying the subjects according to tribe; no account was taken of a man's place of birth or residence, but careful inquiries were made as regards his ancestry.

It may be objected that statistics derived from measurements of the sick do not fairly represent racial types. To this it may be answered, firstly, that the majority of the cases were trivial; secondly, that no individual was included who was suffering from a complaint which might affect head-form or stature; thirdly, that about one-third were not really sick at all. Of the last mentioned, about one hundred were villagers seen at a mission station, another hundred or so were prisoners, chiefly political, in Mombasa gaol, and about three hundred were police or applicants for admission to the police force. The last were certainly above the tribal average in physique. All measurements were taken on adult males. Taken as a whole, therefore, the data may be regarded as fairly representative.

The measurements made were as follows :—

Glabello-occipital head, length ;
Greatest transverse breadth ;
Nasal length ;
Nasal breadth ;
Stature ;

all in accordance with the instructions published in *Notes and Queries on Anthropology*.

The tribes of which measurements were obtained are the following ; their geographical relations one to another can best be gathered from the accompanying map which affords a better indication than any verbal description :—

Hamites.—The Hamitic element in relative purity is represented by the Somali.

Kachamega¹ to the north of Kavirondo Bay; and the Masai, extending, until lately, northward and southward of Kilimanjaro.

Bantu.—The Bantu-speaking tribes consist of : the Baganda to the north of Victoria Nyanza; the Bantu Kavirondo around Kavirondo Bay; the Akikuyu, Embu, and Akamba around Mount Kenia; the Kaseri Wanyamwezi and Sukuma to the south-east of Victoria Nyanza; the Chaga south of Kilimanjaro; the people of Lamu; the Swahili fringing the coast; the Giriama, Duruma, Digo, and Rabai (so-called "Nyika" tribes) behind Mombasa; the Segeju behind Tanga; the Segua behind Bagamoyo; the Wanyassa and Yao (Ajawa) west of Lake Nyassa; and the inhabitants of the Comoro² Islands (who may contain an Indonesian element).

Non-Africans.—The east coast of Africa has been exposed in recent, as well as more remote, times to various influences emanating from outside. The most important intrusive element is constituted by the Arabs, for two reasons. Firstly because their influence is of long standing, and secondly because they have mingled to a great extent with the indigenous population. Measurements are given of Sheher (Bedawi from well behind Aden, a nomad tribe, who are too poor to acquire black slaves and are therefore comparatively pure-blooded), Arabs of Yemen, and Arabs of Muscat. A number of data taken from individuals of mixed Arab and Swahili blood is also included for the sake of comparison. The extent of Indian influence upon Africa is still a doubtful question; certain cultural features, fairly widespread through East Africa, seem to point to a certain amount of intercourse in early times. At the present day the number of Indians in the East Africa Protectorate is considerable and shows a tendency to increase. This modern Indian element is represented by series of measurements of Punjabi, Biloch, and Cutch. Unfortunately no nasal measurements of the Arab and Indian tribes were secured.

In connection with the measurements discussed below, may be taken into consideration the following observations made by the eye alone. There is very little outward resemblance between the Somali and Masai, but the Masai, Kamasia, Njemps, Nandi, and Lumbwa are not very easy to distinguish one from another. The Ja-Luo are quite distinct from this group. Among the Bantu there is considerable variety of type within the tribe, and the tribal groups are difficult to distinguish except by means of tatu and ornaments. The reason may be found in the tribal history. For instance, the Akikuyu appear to be immigrants in the country which they now inhabit; on their arrival they intermarried with, and absorbed, numbers of Athi (Dorobo), and later were joined each year of scarcity by bodies of Kamba, Embu, Meru, and other peoples. The importance of drought as a cause of tribal intermingling requires to be recognized. Every drought, and

¹ The Kachamega are a very mixed people, originally Bantu, but now containing a considerable admixture of Nandi and Ja-Luo. The majority of the old men spoke Bantu as children, but the tribe is rapidly adopting Luo speech.

² Historically the Comoro Islands have received a number of colonists from the Persian Gulf, but it is probable that the population contains an Indonesian element, similar to that of Madagascar, though less in degree.

consequent famine, meant wholesale emigration from the district; only a few of the emigrants returned to their homes when the time of scarcity was over, and the majority settled for good in the new country, often forming alliances with the neighbouring tribes or becoming absorbed by them. In fact, a two-fold process has continually been at work; the pressure of increasing population has driven sections of the agricultural tribes into the plains; while a lengthy drought (such as that of 1897-1898) has driven them back in scattered bands to the mountains, where the streams do not run dry, and edible roots and game may be found in the forests. In this way a great deal of inter-mixture has taken place among the Bantu, who are primarily agricultural. The pastoral tribes (*e.g.*, most of the Nilotes), however, have been less affected, since, being more mobile, they have avoided disaster by periodical migrations, according to seasons, within a more or less well-defined district. Thus there has been a greater tendency to preserve homogeneity of type within the tribe, a tendency which has sometimes been enforced, as among the Masai, by a social system which refuses to incorporate a stranger. Finally, it is perhaps worth mentioning that hair on the face is common among the inland tribes of German East Africa, such as the Wanyamwezi, Sukuma, etc., and the Manyema; is observed occasionally among Akamba, Nyika, and Baganda; but is practically never seen among Akikuyu and Embu.

The method of treatment of the data has been as follows. For each group of measurements and indices the average (symbolized by M) has been calculated, together with its probable error, also the standard deviation (symbolized by σ) and the coefficient of variation (symbolized by C), with their respective errors.

This has resulted in a mass of figures in which it is rather difficult to "see the wood for the trees," and it has been found necessary therefore to adopt some method of summing the differences which exist between tribe and tribe as a whole. The calculation of the coefficient of correlation between each pair of averages would have been a laborious task, and would have resulted in a series of figures to express the difference between each pair of tribes. It has been thought better to attempt to sum this difference in a single figure, even at the price of employing a new formula. The formula adopted, though it has not the mathematical accuracy possessed by the coefficient of correlation as usually calculated, gives, nevertheless, a sufficiently accurate indication of the sum of the differences existing between each pair of tribes to be of practical value. It is the following: $\frac{M_1 - M_2}{\sqrt{\sigma_1^2 + \sigma_2^2}}$

symbolized as Δ . When this has been calculated for each pair of corresponding means, the figures so obtained for each pair of tribes are added together, and the sum expresses degree of difference existing between those tribes. This figure will be called the Differential Index and will be symbolized as $\Sigma\Delta$.¹

¹ S being the sum of each group of absolutes or indices, N the number of individuals composing the group, D the difference of each individual from the mean, SD the sum of these differences, and SD^2 the sum of the squares of the differences; then

$$M = \frac{S}{N}, \quad \sigma = \sqrt{\frac{SD^2}{N}}, \quad EM = \frac{.6745 \times \sigma}{\sqrt{N}}, \quad E\sigma = \frac{.6745 \times \sigma}{\sqrt{2N}}, \quad C = \frac{\sigma \times 100}{M}, \quad EC = \frac{.6745 \times C}{\sqrt{2N}}.$$

Before applying this formula to the results, it will be as well to consider shortly the averages as they stand.

Tables 1 and 11 give the average head lengths, and in Table 1 the tribes are arranged in ascending order and in parallel columns according as they are respectively Hamitic, Nilotic, Bantu, Arab, or Indian. It is immediately apparent that the Somali are among the longer-headed peoples, and with them are grouped certain of the Nilotes, *e.g.*, Masai, Kamasia, Njemps, and Nandi, and the more southerly Bantu tribes. The Baganda are also included in this group. The Arabs, on the other hand, are among the shortest headed (except where they have mingled with the Bantu, for the Arab-Swahili half-breeds are towards the other end of the scale). The Kachamega, Suk, and Nilotic Kavirondo are also short-headed, while the Nyika tribes, together with the Lamu and Comoro peoples, also tend to short-headedness. The approximation of the Lamu and Comoro peoples towards the Arabs, Cutch and Biloch, is interesting. The Punjabi, as might be expected, are widely different from the two latter.

Head breadth is shown in Table 11, also in Table 2 in ascending order. Here the Hamites and Nilotes are towards the lower end of the scale, while the Arabs, Biloch and Cutch, are among the broadest headed. As in the last table the latter are accompanied by the Comoro and Cutch. Of the Bantu, the southern tribes are more broad-headed than the northern, with the exception of the Kaseri, who, now that their neighbours have parted company with the Hamites and the Nilotes, who were grouped with them in Table 1, have remained with the latter. It is interesting to note that the Arab-Swahili half-castes, just as they were longer-headed than either Arabs or Swahili, are now broader-headed than either of their parent peoples.

The cephalic index is shown in Tables 3 and 11, again, in Table 3, in ascending order; and the tribes group themselves more closely in accordance with the division into Nilotic and Bantu. The Nilotics and Somali are distinctly the most dolichocephalic, though three of the former, the Suk, Kachamega, and Nilotic Kavirondo, have a brachycephalic tendency, and in this respect approximate rather to the Nyika tribes. The southern Bantu, including the Baganda, are on the whole more dolichocephalic, and stand in this respect between the great body of the Nilotes and the Nyika tribes; again the Kaseri show affinities with the Hamitic-Nilotic group. Most brachycephalic are the Arabs, Biloch and Cutch, and the peoples of Lamu and Comoro are bracketed with them.

Tables 4 and 12 give statures, Table 4 in ascending order. Once more the Somali and the Nilotes fall together at one end of the scale, being on the whole markedly the tallest. Of the Bantu, the southern tribes have the greatest stature, and among the tallest are grouped the Kaseri. The Arabs (especially the more pure-blooded Sheher), Cutch and Biloch, are short; so, too, the people of Lamu, while those of Comoro show a slight tendency to taller stature.

When we come to consider nasal measurements we have unfortunately to drop many of the tribes hitherto considered, since data were only collected from a

certain number. Tables 5 and 13 show nasal lengths, in ascending order. The Somali and some of the Nilotes, such as the Masai, Njemps, and Turkana, have the longest noses, and are grouped with the Kaseri, followed by the southern Bantu tribes. The shortest noses are found among the tribes immediately to the north of the Victoria Nyanza, both Nilotes and Bantu, since the Baganda, Bantu Kavirondo, Kachamega, and Nilotic Kavirondo are all grouped together at this end of the scale. The Kamba, Kikuyu, and Embu, as throughout, fall closely together among the shorter-nosed.

Tables 6 and 13, of which Table 6 gives the nasal breadths in ascending order, present a similar result. The Somali and Nilotes (except the Nilotic Kavirondo and, in this case, the Turkana) have the narrowest noses, and the Kaseri follow them closely. The tribes of Kenia show a tendency to low nasal breadth, but the broadest noses are found among the southern Bantu tribes, including the Baganda and the two Nilotic peoples mentioned above.

Tables 7 and 13, nasal indices, do not show nearly so sharp a distinction between Nilotic and Bantu as the table of cephalic indices. In fact there seems to be practically no line of demarcation. Of course the Somali have by far the lowest index; they are followed, at some distance, by the Nilotes (except the Kavirondo tribes, and the Turkana who, as we have seen, are distinguished by exceptionally broad noses). The position of the Kaseri is noticeable; they have a very low index, and are thus grouped with the most leptorrhine of the Nilotes; they are consequently separated by some distance from their geographical neighbours, who, with the tribes immediately to the north of the Victoria Nyanza, are the most platyrrhine of the series. The Kenia tribes fall in the middle of the list.

The calculation of the formula $\frac{M_1 - M_2}{\sqrt{\sigma_1^2 + \sigma_2^2}}$ or Δ for all pairs of averages, and the summation of the results for each pair of tribes, gives Table 8, which shows what we may term the "differential index" or $\Sigma\Delta$ for each pair of tribes. This table is the result of head, stature, and nasal measurements and indices, and therefore includes only those tribes among whom the nasal measurements were obtained.

If in any case the formula $\frac{M_1 - M_2}{\sqrt{\sigma_1^2 + \sigma_2^2}}$ works out at 1 or over, any $\Sigma\Delta$ into which it enters as a factor is printed in italics to indicate that in one particular at least considerable divergence exists between the two tribes.

Table 9 shows the order of relation of each tribe according to $\Sigma\Delta$; names in italics have the same significance as the italicized figures in Table 8. The first glance shows that the distinction between Bantu and Nilotic is not absolute for all purposes. We see that the Kamba, Kikuyu, Embu, Suk and Kachamega are inter-connected by differential indices which fall below 2, and we must therefore regard them as one group, of which the Kenia tribes stand in nearer relation one to another than the rest. So, too, the Bantu and Nilotic Kavirondo, and the Baganda are equally closely related, there being little difference between the two first. The Wanyamwezi and Sukuma, again, are extremely close. To return to the

Kamba-Kikuyu-Embu-Suk-Kachamega group, we see, as might be concluded from the inclusion of the latter, that by raising the limiting $\Sigma\Delta$ to 2.50 the Nilotic Kavirondo could be included. But it should be noted that in this case the Embu ought to be subtracted owing to the difference in stature. If the $\Sigma\Delta$ is raised to 3, the Swahili Wanyamwezi and Bantu Kavirondo are included, the last named also differing from the Embu in stature. If the Kavirondo tribes are excluded, the Nandi can be related to the nucleus group at this point, but they do not seem to show any affinity to the Wanyamwezi and Swahili. We have now been brought into relation with the other two groups. If the group, consisting of the Nilotic and Bantu Kavirondo and the Baganda be taken as a nucleus, and the differential index raised to 2.50, we again meet the Wanyamwezi; moreover, the Sukuma could be included if it be kept in mind that their nasal length is rather greater than the original three tribes. By raising the $\Sigma\Delta$ to 3, we include the Akamba, and are only prevented from adding the Embu and Kikuyu owing to the shorter stature of the former, and the narrowness of the nose compared with the Baganda of the latter. The Kamasia is another tribe which appears to have relations on both sides of the Bantu-Nilotic divide. If grouped with the Nilotic Kavirondo ($\Sigma\Delta$ under 2), and the $\Sigma\Delta$ be raised to 2.50, the Suk, Kamba, and Kikuyu can be included; if the $\Sigma\Delta$ is further raised to 3, the Wanyamwezi can be added.

If we now consider the approximately pure Hamites, as represented by the Somali, we see that the Masai alone stand in any close relation with them; the Njemps might have been included were it not for their broader noses. The Masai themselves stand very close to the Njemps, and, if the $\Sigma\Delta$ be raised to 3, the Kaseri can be included. Thus the Kaseri have affinities with the Hamites through the Masai, and at the same time are related, through the Nilotic Kamasia, to the Kikuyu, Kamba, and Suk. They appear also to have some relationship with the Turkana, though the broad noses of the latter make it necessary, perhaps, to consider them more closely akin to the Baganda and Nilotic Kavirondo.

If we consider the reverse of the picture and examine the tribes between which the greatest differences, as evidenced by high differential indices, occur, we may be able to fix their relative positions more exactly. The greatest differences of all exist between the Somali, on the one hand, and the Baganda and Bantu Kavirondo, on the other. But though this is so, the Somali appear remoter from the Nilotic tribes as a whole (other, of course, than the Masai and Njemps) than the rest of the Bantu. On the whole, the figures give support to the theory that one of the main distinctions between the Nilotes and Eastern Bantu consists in the fact that the latter at some remote period received a slight infusion of Hamitic blood. That it was only a slight infusion and distant in time appears to be indicated by the fact that the Kenia tribes are most remote from the Somali themselves and from their nearest relations, the Masai and Njemps.

If we now turn to Table 10, which gives the various differential indices composed of the head and stature measurements of all the tribes, we see that a compact group is formed by the Kenia tribes, Kikuyu, Kamba, and Embu, with the

addition of the Chaga and the Nyika peoples, Rabai, Digo, Giriama, and Duruma. All these fall within a limit of $\Sigma\Delta$ 1. If the limit be raised to 1.25, the Swahili are included; if to 1.50, the Suk, Kachamaga, and Nyasa. Similarly the southern tribes, Segua, Wanyamwezi, and Ajawa form a nucleus, with a $\Sigma\Delta$ of under 1. If this be raised to 1.25, the Nyasa are included, if to 1.50, the Swahili, Sukuma, and Kikuyu. The affinities of the Segeju, on the other hand, appear to be more equally distributed between the Nyika and Kenia tribes, on the one hand, and the more southern Bantu, on the other. It is worthy of note also that the Somali and Baganda, from the point of view of head-measurements and stature alone, approximate, on the whole, more closely to one another and to the southern Bantu tribes than to the Nyika and Kenia peoples and the Nilotes (excepting the Nilotic Kavirondo). As for the people of Lamu, they are to be classed on the whole with the Nyika, though they seem to have affinities also with the Arabs, more particularly the half-breeds and those of Muskat. The Comoro Islanders, on the other hand, seem not to be closely related to any other tribe: and it is interesting to note that they appear to lie nearest to an Indian people, the Biloch. The purer Arabs, the Sheher and those of Yemen, show little African affinities, but those of Muskat appear to bear some relationship with the Nyika and Kenia peoples. It is true that the relationship might disappear if their nasal measurements were available.

Perhaps it will be as well to summarize as shortly as possible the results to which these figures seem to point. The Nyika tribes, Rabai, Digo, Duruma, and Giriama, are very closely related, and the Chaga and Kenia tribes are of the same stock. These Kenia tribes, however, the Kikuyu, Kamba, and Embu, being, as it were, outposts of the Bantu in a northerly direction, have mixed with the tribes across the border, and have thus acquired an affinity with the Baringo Nilotes, Suk and Kamasia, and the Nilotes of Kavirondo, and the Kachamega. Further south, the Wanyamwezi, Sukuma, Ajawa, Nyasa, and Segua appear to constitute another group in the Bantu area, and to this group the Baganda appear to belong rather than to the former, though they seem to have been modified by Nilotic and Hamitic influences. The fact that this group of Bantu stand nearer to the Hamites, represented by the Somali, than does the other group of Bantu, would seem to support the theory that the Bantu had their origin in the leavening of negro tribes by a Hamitic admixture at an early date, and that the Nyika-Kenia tribes have been subsequently modified in the direction of their negro parents by later contact with the Nilotic tribes.

The position of the Kaseri is interesting, since it would seem that they must be connected with the tribes, mainly of Hamitic blood, on the east of the lake, the Bahima, Watusi, Waruanda, etc. At the same time they display certain affinities with the Sukuma. The Segeju seem to stand rather between the southern Bantu group and the Nyika-Kenia peoples.

The affinity of the Masai with the Somali is evident, and it is rather surprising at first sight to see the great difference between the former, on the one hand, and the Suk and Kamasia, on the other; for it might reasonably be supposed

that the non-Hamitic element in the Masai was derived from the Baringo district or its neighbourhood. However, when we examine the figures we see that the Njemps are closely allied to the Masai, the Kamasia to the Njemps, and the Suk, Nandi, and Nilotic Kavirondo, to the Kamasia. The effect of the strong element of Hamitic blood in the Masai has been to modify the nose of that people to such an extent that a great difference in the measurements makes its appearance. The Arabs show very distinct characteristics as compared with the Africans, but a certain amount of admixture may be detected, especially among the Swahili and people of Lamu, and, to a less extent, among the Manyema. Possibly, too, their influence may be traced among some of the Nyika tribes. It is interesting to note that the half-breed Arab-Swahili stand nearly always not, as we might expect, between the Arabs on the one hand, and the Swahili on the other, but to one side of both. The tendency among the Comoro towards an Indian people is noteworthy.

The Punjabi obviously have as yet made no mark upon Africa.

It may be added that certain of the calculations are made from small, and perhaps inadequate, series of measurements, for instance in relation to the Njemps, Nandi, Turkana, Kamasia, Suk, Kaseri, Sukuma, Segua, Ajawa, Bantu Kavirondo, Chaga, Digo, Rabai, and Biloch; and it may be that fuller data might necessitate a modification in the above conclusions. In particular, more measurements on the Njemps, Nandi, Turkana, Suk, and Kaseri would be welcome, as well as nasal measurements relating to all the tribes for which they are now lacking.

Finally it should be stated that the laborious work of collecting the data was performed by Dr. Leys, who wishes to express his thanks to Mr. L. Peacock, Government Dispenser, Mombasa, for considerable assistance, given often at great inconvenience. The responsibility for the calculations rests on Mr. Joyce, though he has the satisfaction of knowing that Dr. Leys agrees in essentials with his conclusions.

TABLE 3.—CEPHALIC INDICES.

| Hamites. | Nilotes. | Bantu. | Arabs. | Indians. |
|------------|--|--|--|-------------------------|
| | Masai ... Njemps ... Nandi ... Turkana ... Kamasia ... | 73.21 73.26 74.17 74.18 74.21 | | 72.34 |
| Somali ... | | 74.79 | | |
| | | Kasari ... Segeju ... Baganda ... Nyasa ... Sukuma ... Duruma ... Embu ... Segua ... Ajawa ... Bantu Kav. Chaga ... Wanyamwezi ... Digo ... Kikuyu ... Rabai ... Kamba ... Girama ... Swahili ... | 74.21 74.72 74.90 75.46 75.50 75.54 75.55 75.56 75.56 75.73 75.80 75.81 75.97 75.99 76.24 76.54 76.56 76.58 | Punjabi ... |
| | Nilotic Kav. ... | 76.20 | Arabs and Swahili | |
| | Suk ... | 77.23 | | |
| | Kachamega ... | 77.44 | | |
| | | Nyika ... Manyema ... Lamu ... | 77.65 78.25 78.42 | |
| | | Comoro ... | 81.22 | |
| | | | Muskat ... Sheher ... Yemen ... | 80.80 80.92 81.07 |
| | | | Biloch ... | 82.75 |
| | | | Cutch ... | |

TABLE 4.—STATURES, AVERAGES.

| Hamites. | Nilotes. | Bantu. | Arabs. | Indians. |
|------------|--|--|---|--|
| | | Rabai ... Digo ... Girama ... Embu ... Segeju ... Lamu ... Kikuyu ... Nyasa ... Chaga ... Swahili ... Duruma ... Ajawa ... Kamba ... Nyika ... Comoro ... Baganda ... Manyema ... Segua ... Wanyanwezi ... Bantu Kav. ... Kaseri ... Sokuma ... | Sheher ... Arabs and Swahili ... Yemen ... Muskat ... 63·61 64·75 64·87 64·90 64·95 66·61 66·64 66·79 67·60 | Cutch ... Biloch ... Punjabi ... 64·29 66·29 |
| Somali ... | Kachamaga ... Nandi ... Suk ... Turkana ... Masai ... Kamasia ... Njemps ... Nilotic Kav. ... | 65·68 66·00 66·06 66·61 66·98 67·71 67·84 68·07 | 68·31 | |

TABLE 5.—NASAL LENGTHS, AVERAGES.

| Hamites. | | Nilotes. | | Bantu. | |
|----------|-----------|------------------|-------|----------------|-------|
| Somali | ... 49.90 | | | Baganda ... | 44.88 |
| | | | | Bantu Kav. ... | 44.92 |
| | | Kachamega ... | 45.06 | | |
| | | Nilotic Kav. ... | 45.50 | | |
| | | Nandi... ... | 45.50 | | |
| | | | | Kamba ... | 45.96 |
| | | | | Kikuyu ... | 46.04 |
| | | | | Embu ... | 46.40 |
| | | Kamasia ... | 46.85 | | |
| | | Suk ... | 47.20 | | |
| | | | | Wanyamwezi | 47.86 |
| | | | | Swahili ... | 48.33 |
| | | | | Sukuma ... | 48.67 |
| | | Turkana ... | 48.78 | | |
| | | | | Kaseri ... | 49.09 |
| | | Masai ... | 50.13 | | |
| | | Njemps ... | 50.40 | | |

TABLE 6.—NASAL BREADTHS, AVERAGES.

| Hamites. | | Nilotes. | | Bantu. | |
|----------|-----------|------------------|-------|----------------|-------|
| Somali | ... 34.70 | | | | |
| | | Masai ... | 38.10 | | |
| | | Nandi... ... | 38.50 | | |
| | | Njemps ... | 39.20 | | |
| | | | | Kamba ... | 39.56 |
| | | | | Kikuyu ... | 39.93 |
| | | Kamasia ... | 40.20 | | |
| | | Suk ... | 40.27 | | |
| | | Kachamega ... | 40.27 | | |
| | | | | Kaseri ... | 40.33 |
| | | | | Embu ... | 40.84 |
| | | Nilotic Kav. ... | 41.71 | | |
| | | | | Bantu Kav. ... | 41.96 |
| | | | | Swahili ... | 42.44 |
| | | | | Baganda ... | 42.81 |
| | | | | Wanyamwezi | 42.86 |
| | | | | Sukuma ... | 43.44 |
| | | Turkana ... | 43.67 | | |

TABLE 7.—NASAL INDICES.

| Hamites. | | Nilotes. | | Bantu. | |
|----------|-----------|--------------|-----------|------------|-----------|
| Somali | ... 69·86 | | | | |
| | | Masai | ... 76·16 | | |
| | | Njemps | ... 78·25 | | |
| | | | | Kaseri | ... 82·75 |
| | | Nandi | ... 84·79 | | |
| | | Suk | ... 85·94 | | |
| | | Kamasia | ... 85·99 | | |
| | | | | Kamba | ... 86·52 |
| | | | | Kikuyu | ... 87·08 |
| | | | | Swahili | ... 87·16 |
| | | | | Embu | ... 88·46 |
| | | Kachamega | ... 89·69 | | |
| | | | | Wanyamwezi | 89·75 |
| | | | | Sukuma | ... 89·83 |
| | | Turkana | ... 89·85 | | |
| | | Nilotic Kav. | ... 91·94 | | |
| | | | | Bantu Kav. | ... 93·76 |
| | | | | Baganda | ... 95·57 |

TABLE 8.—ΣΔ FOR ALL TRIBES (HEAD, NOSE, AND STATURE MEASUREMENTS).

| | Somali. | Masai. | Njemp. | Kamasia. | Suk. | Nandi. | Turkana. | Kachamaga. | Nilotic Kavirondo. | Bantu Kavirondo. | Baganda. | Kaseri. | Sukuma. | Wanyamwezi. | Swahili. | Kikuyu. | Embu. |
|-----------------------|---------|--------|--------|----------|------|--------|----------|------------|--------------------|------------------|----------|---------|---------|-------------|----------|---------|-------|
| Masai ... | 2.65 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Njemp ... | 2.93 | 1.94 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Kamasia ... | 3.82 | 3.22 | 2.69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Suk ... | 5.14 | 5.68 | 5.05 | 2.13 | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Nandi ... | 5.11 | 4.17 | 3.70 | 2.60 | 2.82 | — | — | — | — | — | — | — | — | — | — | — | — |
| Turkana ... | 5.25 | 4.59 | 3.76 | 3.06 | 4.24 | 3.21 | — | — | — | — | — | — | — | — | — | — | — |
| Kachamaga ... | 6.31 | 6.73 | 5.37 | 3.15 | 1.09 | 2.96 | 3.99 | — | — | — | — | — | — | — | — | — | — |
| Nilotic Kavirondo ... | 5.58 | 5.87 | 4.68 | 1.61 | 2.47 | 3.28 | 2.87 | 1.93 | — | — | — | — | — | — | — | — | — |
| Bantu Kavirondo ... | 7.38 | 6.30 | 5.48 | 3.14 | 2.95 | 3.67 | 3.10 | 2.36 | 0.87 | — | — | — | — | — | — | — | — |
| Baganda ... | 7.58 | 6.42 | 6.25 | 3.31 | 3.15 | 3.89 | 2.11 | 2.70 | 1.73 | 1.36 | — | — | — | — | — | — | — |
| Kaseri ... | 4.13 | 2.67 | 2.09 | 1.57 | 2.95 | 2.84 | 1.93 | 3.95 | 3.57 | 3.69 | 4.44 | — | — | — | — | — | — |
| Sukuma ... | 3.82 | 4.38 | 3.79 | 2.20 | 3.06 | 4.58 | 2.87 | 3.38 | 1.88 | 1.89 | 2.88 | 2.66 | — | — | — | — | — |
| Wanyamwezi ... | 5.60 | 5.30 | 4.77 | 2.95 | 2.75 | 4.29 | 2.77 | 2.96 | 2.39 | 2.10 | 2.00 | 3.53 | 0.95 | — | — | — | — |
| Swahili ... | 6.30 | 5.56 | 6.02 | 3.22 | 1.95 | 4.89 | 3.21 | 2.84 | 2.65 | 2.72 | 3.80 | 4.32 | 2.12 | 1.47 | — | — | — |
| Kikuyu ... | 5.18 | 4.99 | 4.63 | 2.05 | 1.25 | 2.30 | 3.30 | 1.79 | 2.13 | 2.59 | 2.93 | 2.62 | 2.75 | 2.50 | 1.70 | — | — |
| Kamba ... | 5.46 | 5.35 | 5.01 | 2.49 | 1.02 | 2.85 | 3.81 | 1.36 | 2.30 | 2.60 | 2.21 | 2.96 | 2.79 | 2.55 | 1.32 | 0.51 | — |
| Embu ... | 5.58 | 5.51 | 5.08 | 2.58 | 1.77 | 2.94 | 3.22 | 1.79 | 1.97 | 2.38 | 2.67 | 3.29 | 2.68 | 2.40 | 1.80 | 0.68 | 1.18 |

TABLE 2.—RELATION OF TRIBES ACCORDING TO $\Sigma \Delta$ (HEAD, NOSE, AND STATURE MEASUREMENTS).

| $\Sigma \Delta$ | 1 and under. | 1.50 and under. | 2 and under. | 2.50 and under. | Under 3. |
|-------------------|----------------|-------------------------------|---|---|---|
| Somali | ... | ... | ... | ... | Masai, <i>Njemps</i> . |
| Masai | ... | ... | Njemps | ... | Somali, Kasori. |
| Njemps | ... | ... | Masai | ... | Kamasin, <i>Somali</i> . |
| Kamasia | ... | ... | Kasari, Nilotic Kav. | Suk, Kikuyu, Kamba, Sukuma | Njemps, Nandi, Wanyamwezi, Embu. |
| Suk | ... | Kamba, Kikuyu, Kachamega | Swahili, Embu... | Kamasia, Nilotic Kav. | Kasari, Nandi, Wanyamwezi, Bantu Kav. |
| Nandi | ... | ... | ... | Kikuyu... | Suk, Kamasia, Kamba, Embu, Kachamega, <i>Kasari</i> . |
| Turkana | ... | ... | Kasari... | Baganda, Sukuma | Nilotic Kav. |
| Kachamega | ... | Suk, Kamba | Kikuyu, Nilotic Kav., Embu | Bantu Kav. | Nandi, Swahili, Wanyamwezi, Baganda. |
| Nilotic Kavirondo | Bantu Kav. | ... | Baganda, Kamasia, Kachamega, Sukuma, Embu | Suk, Kamba, Kikuyu, Wanyamwezi | Swahili, Turkana. |
| Bantu Kavirondo | Nilotic Kav... | Baganda | Sukuma | Wanyamwezi, Kachamega, Embu | Suk, Kamba, Kikuyu, Swahili. |
| Baganda | ... | Bantu Kav. | Nilotic Kav. | Kamba, Wanyamwezi, Turkana, Sukuma | Embu, Kachamega, <i>Kikuyu</i> . |
| Kasari | ... | ... | Kamasia, Turkana | Njemps | Masai, Suk, Kamba, Kikuyu, Sukuma, <i>Nandi</i> . |
| Sukuma | Wanyamwezi | ... | Nilotic Kav., Bantu Kav. | Kamasia, Swahili, Turkana, Baganda | Kasari, Kamba, Kikuyu, Embu. |
| Wanyamwezi | Sukuma | Swahili | ... | Embu, Nilotic Kav., Bantu Kav., Baganda | Suk, Kamba, Kikuyu, Kamasia, Kachamega. |
| Swahili | ... | Kamba, Wanyamwezi | Suk, Kikuyu, Embu | Sukuma | Kachamega, Nilotic Kav., Bantu Kav. |
| Kikuyu | Kamba, Embu | Suk | Swahili, Kachamega | Nandi, Kamasia, Nilotic Kav. | Kasari, Wanyamwezi, Sukuma, Bantu Kav., Baganda. |
| Kamba | Kikuyu | Suk, Swahili, Embu, Kachamega | ... | Kamasia, Baganda, Nilotic Kav. | Kasari, Nandi, Wanyamwezi, Sukuma, Bantu Kav. |
| Embu | Kikuyu | Kamba | Swahili, Kachamega Suk, Bantu Kav. | Wanyamwezi, Bantu Kav. | Nandi, Baganda, Kamasia, Sukuma. |

TABLE 10.— $\Sigma\Delta$ FOR ALL TRIBES (HEAD

| | Somali. | Masai. | Njemps. | Kamasia. | Suk. | Nandi. | Turkana. | Kachamega. | Nilotic Kavirondo. | Bantu Kavirondo. | Baganda. | Kasari. | Sukuma. | Wanyamwezi. | Nyasa. | Ajawa. | Segeju. |
|--------------------|---------|--------|---------|----------|------|--------|----------|------------|--------------------|------------------|----------|---------|---------|-------------|--------|--------|---------|
| Masai ... | 1.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Njemps ... | 1.20 | 1.47 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Kamasia ... | 0.36 | 0.86 | 1.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Suk ... | 2.00 | 3.66 | 3.58 | 2.13 | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Nandi ... | 1.75 | 1.92 | 1.42 | 1.50 | 1.75 | — | — | — | — | — | — | — | — | — | — | — | — |
| Turkana ... | 1.58 | 1.79 | 1.25 | 1.18 | 2.75 | 0.25 | — | — | — | — | — | — | — | — | — | — | — |
| Kachamega ... | 2.00 | 3.43 | 3.42 | 2.25 | 0.29 | 1.96 | 2.39 | — | — | — | — | — | — | — | — | — | — |
| Nilotic Kav. ... | 0.75 | 2.02 | 1.75 | 1.06 | 1.04 | 1.64 | 1.49 | 1.25 | — | — | — | — | — | — | — | — | — |
| Bantu Kav. ... | 0.95 | 1.80 | 1.95 | 1.25 | 1.33 | 1.67 | 1.50 | 1.42 | 0.67 | — | — | — | — | — | — | — | — |
| Baganda ... | 0.61 | 1.42 | 1.67 | 0.95 | 1.13 | 1.00 | 1.26 | 1.28 | 1.08 | 0.86 | — | — | — | — | — | — | — |
| Kasari ... | 1.08 | 1.02 | 0.92 | 0.87 | 2.32 | 0.64 | 0.29 | 2.45 | 1.29 | 1.00 | 0.50 | — | — | — | — | — | — |
| Sukuma ... | 0.54 | 2.05 | 1.67 | 0.89 | 1.71 | 1.95 | 2.20 | 1.78 | 0.54 | 0.38 | 0.92 | 1.37 | — | — | — | — | — |
| Wanyamwezi ... | 1.28 | 2.00 | 2.67 | 1.55 | 1.44 | 1.79 | 2.37 | 1.46 | 1.21 | 1.66 | 0.58 | 1.63 | 0.70 | — | — | — | — |
| Nyasa ... | 1.00 | 1.96 | 2.08 | 1.33 | 1.49 | 1.41 | 1.64 | 1.50 | 1.33 | 0.91 | 0.36 | 1.08 | 1.37 | 1.11 | — | — | — |
| Ajawa ... | 1.64 | 2.62 | 3.40 | 1.75 | 2.25 | 2.50 | 3.17 | 2.13 | 1.88 | 1.43 | 1.30 | 2.38 | 1.33 | 0.78 | 1.20 | — | — |
| Segeju ... | 1.00 | 2.07 | 2.45 | 1.36 | 2.00 | 1.92 | 2.01 | 2.00 | 1.75 | 1.70 | 0.36 | 1.79 | 1.54 | 1.21 | 0.50 | 1.23 | — |
| Segua ... | 1.47 | 2.00 | 2.84 | 1.54 | 1.77 | 1.93 | 2.32 | 1.75 | 1.67 | 1.16 | 0.85 | 2.00 | 1.20 | 0.39 | 1.16 | 0.50 | 1.75 |
| Swahili ... | 1.92 | 2.35 | 3.12 | 2.19 | 0.96 | 1.92 | 2.21 | 1.09 | 1.40 | 1.19 | 1.32 | 1.68 | 1.39 | 0.80 | 0.94 | 0.86 | 1.45 |
| Lamu ... | 2.80 | 3.56 | 4.24 | 3.04 | 1.34 | 2.86 | 3.16 | 1.50 | 2.00 | 2.21 | 2.24 | 2.67 | 2.29 | 1.81 | 1.80 | 1.55 | 1.75 |
| Rabai ... | 1.75 | 2.70 | 2.95 | 2.04 | 1.36 | 1.67 | 2.32 | 1.45 | 1.25 | 0.86 | 1.09 | 1.79 | 1.22 | 0.39 | 0.86 | 1.03 | 0.74 |
| Digo ... | 2.03 | 3.42 | 3.93 | 2.33 | 1.25 | 2.13 | 2.55 | 1.36 | 1.33 | 1.39 | 1.55 | 2.51 | 1.84 | 1.67 | 0.88 | 1.56 | 0.69 |
| Duruma ... | 1.67 | 2.29 | 2.58 | 1.95 | 1.03 | 1.31 | 1.60 | 1.14 | 0.89 | 1.25 | 1.06 | 1.56 | 1.46 | 1.21 | 0.67 | 1.29 | 1.23 |
| Giriana ... | 2.13 | 4.14 | 3.83 | 2.42 | 0.64 | 2.20 | 2.96 | 0.88 | 1.38 | 1.79 | 1.61 | 2.08 | 2.00 | 1.83 | 1.29 | 1.91 | 1.13 |
| Nyika ... | 2.75 | 4.25 | 4.25 | 2.91 | 1.54 | 2.97 | 3.71 | 1.60 | 1.85 | 1.92 | 2.02 | 2.58 | 2.13 | 1.46 | 1.75 | 1.13 | 2.18 |
| Chaga ... | 1.88 | 2.39 | 2.63 | 2.08 | 0.83 | 1.42 | 1.84 | 1.04 | 1.04 | 1.26 | 1.11 | 1.71 | 1.58 | 1.35 | 0.79 | 1.38 | 1.38 |
| Kikuyu ... | 1.38 | 2.11 | 2.58 | 1.69 | 0.92 | 1.33 | 1.60 | 1.12 | 0.88 | 0.96 | 0.80 | 1.58 | 1.17 | 0.92 | 0.38 | 1.00 | 0.96 |
| Kamba ... | 1.99 | 2.95 | 3.27 | 2.20 | 0.75 | 1.92 | 2.24 | 0.89 | 1.14 | 1.20 | 1.31 | 2.10 | 1.38 | 1.13 | 0.92 | 1.30 | 1.55 |
| Embu ... | 1.58 | 2.56 | 2.87 | 1.90 | 1.13 | 1.67 | 1.84 | 1.39 | 1.11 | 1.28 | 1.12 | 1.90 | 1.39 | 1.22 | 0.61 | 1.28 | 0.58 |
| Manyema ... | 2.15 | 3.20 | 3.20 | 2.40 | 1.20 | 2.00 | 2.46 | 1.31 | 1.61 | 1.37 | 1.45 | 2.52 | 1.55 | 1.01 | 1.68 | 1.42 | 2.25 |
| Arabs and Swahili. | 1.98 | 2.58 | 2.28 | 2.28 | 1.83 | 2.64 | 2.96 | 1.97 | 2.23 | 1.74 | 1.67 | 2.24 | 1.78 | 1.29 | 1.56 | 0.69 | 1.57 |
| Muskat ... | 2.68 | 4.05 | 4.65 | 2.84 | 1.12 | 2.68 | 2.93 | 0.74 | 1.94 | 1.98 | 1.99 | 3.12 | 2.29 | 1.71 | 1.83 | 1.79 | 2.22 |
| Yemen ... | 3.66 | 4.85 | 5.50 | 3.77 | 2.80 | 3.71 | 3.10 | 1.71 | 2.91 | 2.96 | 2.93 | 3.76 | 3.42 | 2.83 | 2.96 | 2.92 | 3.19 |
| Sheher ... | 4.13 | 5.04 | 6.02 | 4.22 | 2.79 | 4.21 | 4.59 | 2.18 | 3.38 | 3.79 | 3.46 | 3.94 | 3.81 | 3.42 | 3.43 | 3.21 | 3.08 |
| Comoro ... | 3.79 | 4.14 | 5.29 | 3.88 | 2.66 | 3.70 | 4.00 | 2.51 | 2.98 | 3.13 | 3.05 | 4.33 | 3.59 | 3.03 | 3.09 | 2.63 | 3.21 |
| Biloch ... | 4.13 | 5.42 | 5.67 | 4.33 | 2.46 | 4.22 | 4.97 | 2.12 | 3.38 | 3.38 | 3.44 | 4.71 | 3.58 | 3.03 | 3.13 | 2.75 | 3.71 |
| Cutch ... | 4.85 | 6.17 | 6.84 | 4.91 | 3.63 | 5.00 | 5.22 | 2.74 | 4.08 | 4.28 | 4.16 | 4.95 | 4.75 | 4.29 | 4.25 | 4.08 | 3.88 |
| Punjabi ... | 1.92 | 1.46 | 1.25 | 1.78 | 2.77 | 1.10 | 1.51 | 2.92 | 2.67 | 1.41 | 1.53 | 1.42 | 2.46 | 2.33 | 1.92 | 2.60 | 2.08 |

TABLE 11.
AVERAGES, STANDARD DEVIATIONS, COEFFICIENTS OF VARIATION AND THEIR ERRORS.

| Tribe. | Head length. | | | | | Head breadth. | | | | | Cephalic index. | | | | |
|-------------------|--------------|------|------------|--------------|------|---------------|--------|------|------------|--------------|-----------------|-----|-------|------|------------|
| | M. | E.M. | σ . | E σ . | C. | EC. | M. | E.M. | σ . | E σ . | C. | EC. | M. | E.M. | σ . |
| | | | | | | | | | | | | | | | |
| Somali | 191.81 | .62 | 4.75 | .44 | 2.48 | .23 | 143.19 | .56 | 4.34 | .40 | 3.03 | .28 | 74.79 | .37 | 2.89 |
| Masai | 194.67 | .37 | 5.28 | .26 | 2.71 | .14 | 142.49 | .38 | 5.37 | .27 | 3.77 | .19 | 73.21 | .18 | 2.39 |
| Njemp | 191.27 | 1.00 | 4.90 | .70 | 2.57 | .37 | 139.82 | .77 | 3.77 | .54 | 2.70 | .39 | 73.26 | .32 | 1.58 |
| Kamasia | 192.70 | 1.00 | 6.06 | .71 | 3.46 | .37 | 142.70 | .69 | 4.59 | .59 | 3.22 | .34 | 74.21 | .42 | 2.79 |
| Suk ... | 185.80 | .74 | 4.24 | .52 | 2.34 | .29 | 143.47 | .61 | 3.57 | .44 | 2.49 | .31 | 77.23 | .30 | 1.72 |
| Nandi | 189.29 | .73 | 4.06 | .52 | 2.15 | .27 | 140.36 | .68 | 3.79 | .48 | 2.70 | .34 | 74.17 | .48 | 2.08 |
| Turkana | 189.00 | 1.00 | 4.46 | .71 | 2.36 | .38 | 140.22 | 1.14 | 5.05 | .80 | 3.60 | .57 | 74.18 | .31 | 1.36 |
| Kachamega | 184.22 | .42 | 6.19 | .30 | 3.36 | .16 | 142.54 | .33 | 4.84 | .23 | 3.40 | .16 | 77.44 | .20 | 3.01 |
| Nilotic Kavirondo | 188.38 | .70 | 6.31 | .49 | 3.35 | .26 | 143.22 | .51 | 4.62 | .36 | 3.23 | .25 | 76.20 | .33 | 2.94 |
| Bantu Kavirondo | 189.88 | .69 | 5.04 | .49 | 2.65 | .26 | 143.75 | .55 | 3.98 | .37 | 2.77 | .27 | 75.73 | .36 | 2.63 |
| Beganda | 191.30 | .76 | 7.48 | .54 | 3.91 | .28 | 143.14 | .46 | 4.52 | .33 | 3.16 | .23 | 74.90 | .28 | 2.72 |
| Kasari | 190.08 | 1.19 | 6.06 | .83 | 3.19 | .46 | 141.33 | .99 | 5.06 | .70 | 3.58 | .49 | 74.41 | .60 | 3.08 |
| Sukuma | 191.43 | .95 | 6.46 | .67 | 3.37 | .35 | 144.33 | .55 | 3.75 | .39 | 2.90 | .27 | 75.50 | .32 | 2.15 |
| Wanyamwezi | 191.01 | .38 | 5.67 | .27 | 2.97 | .14 | 144.70 | .21 | 3.16 | .15 | 2.18 | .10 | 75.81 | .12 | 1.84 |
| Nyasa | 189.57 | .86 | 5.87 | .61 | 3.10 | .32 | 143.19 | .57 | 3.89 | .40 | 2.72 | .24 | 75.46 | .34 | 2.29 |
| Ajawa | 192.94 | .82 | 4.89 | .58 | 2.53 | .30 | 145.75 | .64 | 3.80 | .45 | 2.61 | .31 | 75.56 | .38 | 2.24 |
| Segeju | 191.91 | .61 | 5.29 | .43 | 2.76 | .23 | 143.32 | .56 | 4.81 | .39 | 3.36 | .27 | 74.72 | .39 | 3.33 |
| Segua | 192.92 | 1.27 | 6.49 | .89 | 3.36 | .46 | 145.67 | 1.14 | 5.99 | .82 | 4.11 | .57 | 75.56 | .65 | 3.32 |
| Swahili | 189.38 | .67 | 7.22 | .47 | 3.81 | .25 | 144.91 | .48 | 5.13 | .34 | 2.54 | .23 | 76.58 | .26 | 2.80 |

TABLE 11—continued.
AVERAGES, STANDARD DEVIATIONS, COEFFICIENTS OF VARIATION AND THEIR ERRORS.

| Tribe. | Head length. | | | | | | Head breadth. | | | | | | Cephalic index. | | | |
|-------------------|--------------|------|------------|--------------|------|------|---------------|------|------------|--------------|------|------|-----------------|------|------------|--------------|
| | M. | E.M. | σ . | E σ . | C. | E.C. | M. | E.M. | σ . | E σ . | C. | E.C. | M. | E.M. | σ . | E σ . |
| | | | | | | | | | | | | | | | | |
| Lamu | 186.65 | .61 | 4.68 | .44 | 2.51 | .23 | 146.31 | .62 | 4.71 | .44 | 3.22 | .30 | 78.42 | .39 | 2.97 | .28 |
| Rabai | 188.69 | 1.35 | 7.25 | .96 | 3.84 | .51 | 143.92 | 1.01 | 5.42 | .72 | 3.77 | .50 | 76.24 | .45 | 2.39 | .32 |
| Digo | 188.13 | 1.18 | 6.75 | .83 | 3.59 | .44 | 142.87 | .92 | 5.26 | .65 | 3.68 | .45 | 75.97 | .38 | 2.20 | .27 |
| Duruma | 189.39 | .49 | 5.99 | .35 | 3.18 | .19 | 142.25 | .43 | 5.19 | .30 | 3.65 | .21 | 75.54 | .21 | 2.56 | .15 |
| Giriana | 187.13 | .81 | 5.90 | .57 | 3.15 | .31 | 143.21 | .62 | 4.53 | .44 | 3.16 | .31 | 76.56 | .30 | 2.19 | .21 |
| Nyika | 188.06 | .91 | 5.75 | .65 | 3.06 | .34 | 145.94 | .38 | 2.37 | .27 | 1.62 | .18 | 77.65 | .43 | 2.70 | .30 |
| Chaga | 187.33 | .81 | 5.08 | .57 | 2.71 | .30 | 142.22 | .69 | 4.33 | .49 | 3.04 | .34 | 75.80 | .51 | 3.20 | .36 |
| Kikuyu | 188.72 | .21 | 6.13 | .15 | 3.25 | .08 | 143.35 | .17 | 4.93 | .12 | 3.43 | .08 | 75.99 | .11 | 3.30 | .08 |
| Kamba | 187.80 | .31 | 5.24 | .22 | 2.79 | .12 | 143.63 | .30 | 5.09 | .21 | 3.54 | .15 | 76.54 | .16 | 2.80 | .12 |
| Embu | 189.08 | .44 | 6.52 | .41 | 3.45 | .31 | 142.69 | .35 | 5.16 | .25 | 3.62 | .17 | 75.55 | .20 | 2.90 | .14 |
| Manyema | 188.62 | .71 | 6.85 | .50 | 3.63 | .27 | 147.50 | .63 | 6.01 | .44 | 4.07 | .30 | 78.25 | .32 | 3.06 | .23 |
| Arabs and Swahili | 191.53 | .81 | 6.81 | .57 | 3.56 | .30 | 148.00 | .50 | 4.19 | .35 | 2.83 | .24 | 77.38 | .42 | 3.55 | .30 |
| Muscat Arabs | 184.35 | 1.01 | 8.34 | .71 | 4.52 | .39 | 144.58 | .64 | 5.30 | .45 | 3.67 | .31 | 78.28 | .50 | 4.10 | .35 |
| Yemen Arabs | 180.95 | .89 | 5.92 | .63 | 3.27 | .35 | 145.50 | .82 | 5.41 | .58 | 3.73 | .40 | 81.07 | .66 | 4.37 | .37 |
| Sheher | 180.21 | .46 | 6.40 | .35 | 3.55 | .19 | 145.76 | .42 | 5.58 | .29 | 3.14 | .17 | 80.92 | .27 | 3.67 | .19 |
| Comoro | 187.43 | .94 | 6.72 | .67 | 3.59 | .36 | 152.09 | .82 | 5.83 | .58 | 3.83 | .38 | 81.22 | .53 | 3.63 | .36 |
| Biloch | 181.20 | 1.08 | 6.20 | .76 | 3.42 | .42 | 146.27 | .70 | 4.01 | .49 | 2.74 | .36 | 80.80 | .55 | 3.13 | .39 |
| Cutch | 179.38 | .79 | 5.75 | .56 | 3.21 | .31 | 148.33 | .93 | 6.78 | .66 | 4.57 | .44 | 82.75 | .61 | 4.45 | .43 |
| Punjabi | 191.75 | .49 | 5.59 | .34 | 2.92 | .18 | 138.62 | .34 | 3.96 | .24 | 2.86 | .18 | 72.34 | .23 | 2.70 | .23 |

TABLE 12.—AVERAGES, STANDARD DEVIATIONS AND ERRORS.

| | Stature. | | | |
|--------------------------|----------|-----|------------|--------------|
| | M. | EM. | σ . | E σ . |
| Somali | 68.31 | .35 | 2.70 | .25 |
| Masai | 66.93 | .17 | 2.39 | .12 |
| Njemps | 67.84 | .47 | 2.26 | .34 |
| Kamasia | 67.71 | .43 | 2.85 | .30 |
| Suk | 66.06 | .45 | 2.61 | .32 |
| Nandi | 66.00 | .32 | 1.81 | .23 |
| Turkana | 66.71 | .76 | 3.39 | .54 |
| Kachamega | 65.68 | .19 | 2.75 | .13 |
| Nilotic Kavirondo | 68.07 | .31 | 2.81 | .22 |
| Bantu Kavirondo | 66.64 | .32 | 2.26 | .23 |
| Baganda | 65.54 | .20 | 1.98 | .14 |
| Kaseri | 66.79 | .34 | 1.73 | .24 |
| Sukuma | 67.60 | .39 | 2.65 | .28 |
| Wanyamwezi | 65.94 | .14 | 2.03 | .10 |
| Nyasa | 64.57 | .37 | 2.52 | .26 |
| Ajawa | 65.05 | .41 | 2.41 | .29 |
| Segeju | 64.23 | .23 | 1.99 | .16 |
| Segua | 65.75 | .23 | 1.16 | .16 |
| Swahili | 64.83 | .18 | 1.98 | .13 |
| Lamu | 64.45 | .23 | 1.77 | .17 |
| Rabai | 64.02 | .57 | 3.05 | .40 |
| Digo | 64.15 | .23 | 1.33 | .16 |
| Duruma | 64.93 | .19 | 2.27 | .13 |
| Girama | 64.16 | .32 | 2.32 | .23 |
| Nyika | 65.28 | .25 | 1.55 | .17 |
| Chaga | 64.63 | .28 | 3.03 | .34 |
| Kikuyu | 64.57 | .08 | 2.46 | .06 |
| Kamba | 65.22 | .13 | 2.23 | .09 |
| Embu | 64.18 | .16 | 2.41 | .11 |
| Manyema | 65.65 | .26 | 2.49 | .18 |
| Arabs and Swahili | 64.75 | .27 | 2.27 | .19 |
| Muscat Arabs | 64.90 | .23 | 1.88 | .16 |
| Yemen Arabs | 64.87 | .30 | 1.98 | .23 |
| Sheher | 63.61 | .17 | 2.28 | .12 |
| Comoro | 65.47 | .23 | 1.64 | .16 |
| Biloch | 64.95 | .39 | 2.23 | .27 |
| Cutch | 64.29 | .29 | 2.13 | .21 |
| Punjabi | 66.29 | .20 | 2.25 | .14 |

TABLE 13.—AVERAGES, STANDARD DEVIATIONS, COEFFICIENTS OF VARIATION AND ERRORS.

| Tribe. | Nasal length. | | | | | Nasal breadth. | | | | | Nasal index. | | | | | |
|-------------------|---------------|-----|------------|--------------|------|----------------|-------|-----|------------|--------------|--------------|------|-------|------|------------|--------------|
| | M. | EM. | σ . | E σ . | C. | EC. | M. | EM. | σ . | E σ . | C. | EC. | M. | EM. | σ . | E σ . |
| | | | | | | | | | | | | | | | | |
| Somali ... | 49.90 | .60 | 2.84 | .43 | 5.69 | .86 | 34.70 | .66 | 3.07 | .46 | 8.85 | 1.11 | 69.86 | 1.91 | 8.96 | 1.13 |
| Masai ... | 50.13 | .26 | 3.44 | .19 | 6.86 | .38 | 38.10 | .23 | 2.95 | .14 | 7.74 | .82 | 76.16 | .47 | 6.12 | .33 |
| Njemps ... | 50.40 | .84 | 3.95 | .60 | 7.84 | 1.18 | 39.20 | .46 | 2.14 | .32 | 5.46 | .82 | 78.25 | 1.24 | 7.31 | 1.10 |
| Kamasia ... | 46.85 | .45 | 2.99 | .32 | 6.38 | .68 | 40.20 | .50 | 3.33 | .36 | 8.28 | 1.27 | 85.99 | 1.02 | 6.79 | .72 |
| Suk ... | 47.20 | .61 | 3.49 | .43 | 7.39 | .91 | 40.27 | .55 | 3.17 | .39 | 7.87 | .97 | 85.94 | 1.84 | 10.58 | 1.28 |
| Nandi ... | 45.50 | .37 | 1.75 | .24 | 3.85 | .58 | 38.50 | .46 | 2.16 | .33 | 5.61 | .85 | 84.79 | 1.40 | 6.55 | .99 |
| Turkana ... | 48.78 | .87 | 3.88 | .62 | 7.95 | 1.26 | 43.67 | .81 | 3.59 | .57 | 8.22 | .31 | 89.85 | 1.76 | 7.81 | 1.24 |
| Kachamega ... | 45.06 | .23 | 3.38 | .16 | 7.50 | .36 | 40.27 | .17 | 2.51 | .12 | 6.23 | .30 | 89.69 | .50 | 7.46 | .36 |
| Nilotic Kavirondo | 45.50 | .35 | 2.75 | .25 | 6.05 | .55 | 41.71 | .38 | 3.00 | .27 | 7.19 | .65 | 91.94 | .98 | 7.70 | .69 |
| Bantu Kavirondo | 44.92 | .40 | 2.93 | .29 | 6.52 | .63 | 41.96 | .36 | 2.64 | .26 | 6.29 | .61 | 93.76 | .87 | 6.31 | .61 |
| Baganda ... | 44.88 | .30 | 2.48 | .21 | 5.50 | .46 | 42.81 | .28 | 2.38 | .20 | 5.56 | .43 | 95.57 | .71 | 5.96 | .50 |
| Kaseri ... | 49.08 | .70 | 3.59 | .49 | 7.21 | 1.01 | 40.33 | .26 | 1.31 | .02 | 3.25 | .45 | 82.75 | 1.30 | 6.69 | .92 |
| Sukuma ... | 48.67 | .54 | 3.40 | .38 | 6.99 | .77 | 43.44 | .64 | 4.04 | .45 | 9.30 | 1.05 | 89.83 | 1.77 | 11.15 | 1.09 |
| Wanyamwezi | 47.86 | .30 | 2.92 | .21 | 6.10 | .44 | 42.86 | .33 | 3.29 | .24 | 7.68 | .55 | 89.75 | .74 | 7.27 | .52 |
| Swahili ... | 48.33 | .63 | 2.79 | .44 | 5.77 | .92 | 42.44 | .24 | 1.07 | .17 | 2.52 | .40 | 87.16 | 1.27 | 5.63 | .90 |
| Kikuyu ... | 46.04 | .13 | 3.24 | .09 | 7.04 | .20 | 39.93 | .12 | 2.85 | .08 | 7.14 | .21 | 87.08 | .25 | 6.09 | .18 |
| Kamba ... | 45.94 | .33 | 3.62 | .23 | 7.88 | .51 | 39.56 | .25 | 2.77 | .18 | 7.00 | .45 | 86.52 | .68 | 7.50 | .48 |
| Embu ... | 46.40 | .23 | 3.34 | .16 | 7.20 | .34 | 40.84 | .19 | 2.87 | .14 | 7.03 | .33 | 88.46 | .56 | 8.23 | .39 |

SOMALI.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 203 | 148 | 72.91 | 50 | 33 | 66.00 | 10½ |
| 2 | 194 | 148 | 77.08 | 46 | 37 | 80.43 | 8½ |
| 3 | 192 | 146 | 76.04 | 51 | 38 | 74.51 | 7 |
| 4 | 196 | 143 | 72.96 | 51 | 29 | 56.86 | 8½ |
| 5 | 196 | 147 | 75.26 | 48 | 37 | 77.08 | 9 |
| 6 | 187 | 145 | 77.54 | 53 | 34 | 64.15 | 11 |
| 7 | 193 | 135 | 69.95 | 56 | 31 | 55.36 | 9½ |
| 8 | 183 | 144 | 78.69 | 49 | 36 | 73.47 | 7 |
| 9 | 194 | 146 | 75.26 | 47 | 39 | 82.98 | 8 |
| 10 | 186 | 144 | 77.42 | 48 | 33 | 68.75 | 6 |
| 11 | 188 | 133 | 70.74 | — | — | — | 10½ |
| 12 | 195 | 143 | 73.33 | — | — | — | 10 |
| 13 | 189 | 146 | 77.25 | — | — | — | 6¾ |
| 14 | 185 | 142 | 76.76 | — | — | — | 6¾ |
| 15 | 196 | 144 | 73.47 | — | — | — | 3½ |
| 16 | 186 | 149 | 80.11 | — | — | — | 8½ |
| 17 | 196 | 135 | 68.88 | — | — | — | 8 |
| 18 | 190 | 139 | 73.16 | — | — | — | 8½ |
| 19 | 195 | 147 | 75.30 | — | — | — | 11½ |
| 20 | 190 | 138 | 72.63 | — | — | — | 6 |
| 21 | 194 | 140 | 72.16 | — | — | — | 6 |
| 22 | 183 | 145 | 79.23 | — | — | — | 5½ |
| 23 | 194 | 138 | 71.13 | — | — | — | 14 |
| 24 | 192 | 141 | 73.44 | — | — | — | 3½ |
| 25 | 199 | 148 | 74.37 | — | — | — | 10½ |
| 26 | 191 | 145 | 75.92 | — | — | — | 6½ |
| 27 | 192 | 147 | 76.56 | — | — | — | 7½ |

MASAI.

| | | | | | | | |
|---|-----|-----|-------|---|---|---|----|
| 1 | 189 | 143 | 75.66 | — | — | — | 4½ |
| 2 | 194 | 140 | 72.16 | — | — | — | 5 |
| 3 | 190 | 138 | 72.63 | — | — | — | 3 |
| 4 | 200 | 140 | 70.00 | — | — | — | 13 |
| 5 | 199 | 139 | 69.85 | — | — | — | 9½ |

MASAI—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 6 | 194 | 141 | 72.68 | — | — | — | 9½ |
| 7 | 195 | 137 | 70.26 | — | — | — | 8½ |
| 8 | 205 | 146 | 71.22 | — | — | — | 7½ |
| 9 | 198 | 142 | 71.72 | — | — | — | 7½ |
| 10 | 184 | 136 | 73.91 | — | — | — | 2¾ |
| 11 | 193 | 145 | 75.13 | — | — | — | 5½ |
| 12 | 186 | 138 | 74.19 | — | — | — | 4 |
| 13 | 197 | 150 | 76.14 | — | — | — | 8½ |
| 14 | 197 | 139 | 70.56 | — | — | — | 6½ |
| 15 | 197 | 143 | 72.59 | 49 | 40 | 85.71 | 6½ |
| 16 | 194 | 140 | 72.16 | 51 | 41 | 80.39 | 7½ |
| 17 | 187 | 144 | 77.01 | 45 | 35 | 77.78 | 6½ |
| 18 | 196 | 140 | 71.43 | 50 | 38 | 76.00 | 5 |
| 19 | 194 | 138 | 71.13 | 47 | 35 | 74.47 | 6½ |
| 20 | 193 | 140 | 72.54 | 46 | 39 | 84.78 | 6½ |
| 21 | 198 | 143 | 72.22 | 45 | 38 | 84.44 | 7½ |
| 22 | 192 | 139 | 72.40 | 46 | 35 | 76.09 | 3½ |
| 23 | 197 | 154 | 78.17 | 41 | 39 | 95.12 | 4½ |
| 24 | 199 | 141 | 70.85 | 51 | 34 | 66.67 | 6¼ |
| 25 | 197 | 140 | 71.07 | 47 | 36 | 76.60 | 4¼ |
| 26 | 190 | 139 | 73.16 | 48 | 38 | 79.17 | 7½ |
| 27 | 197 | 146 | 74.11 | 50 | 40 | 80.00 | 9¼ |
| 28 | 198 | 143 | 72.22 | 49 | 38 | 77.55 | 6 |
| 29 | 186 | 139 | 74.73 | 51 | 38 | 74.51 | 7¼ |
| 30 | 192 | 146 | 76.04 | 50 | 42 | 84.00 | 5¼ |
| 31 | 197 | 140 | 71.07 | 60 | 38 | 63.33 | 10 |
| 32 | 193 | 140 | 71.89 | 46 | 39 | 84.78 | 6½ |
| 33 | 185 | 144 | 77.84 | 47 | 35 | 74.47 | 7¼ |
| 34 | 199 | 144 | 72.36 | 46 | 37 | 80.43 | 5 |
| 35 | 197 | 141 | 71.57 | 47 | 37 | 78.22 | 8¼ |
| 36 | 196 | 147 | 75.00 | 51 | 38 | 74.51 | 5½ |
| 37 | 195 | 137 | 70.26 | 45 | 39 | 81.25 | 8¼ |
| 38 | 201 | 149 | 74.13 | 45 | 36 | 80.00 | 9 |
| 39 | 206 | 147 | 71.36 | 50 | 38 | 76.00 | 8½ |
| 40 | 204 | 155 | 75.98 | 53 | 36 | 67.92 | 5¼ |
| 41 | 206 | 152 | 73.79 | 49 | 35 | 71.43 | 13 |
| 42 | 184 | 137 | 74.46 | 50 | 36 | 72.00 | 4½ |
| 43 | 195 | 145 | 74.36 | 53 | 37 | 76.81 | 4½ |
| 44 | 193 | 136 | 70.47 | 53 | 37 | 76.81 | 5¼ |

MASAI—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 45 | 196 | 144 | 73.47 | 50 | 36 | 72.00 | 5½ |
| 46 | 191 | 148 | 77.49 | 47 | 35 | 74.47 | 4½ |
| 47 | 190 | 141 | 74.21 | 49 | 37 | 75.51 | 5½ |
| 48 | 195 | 147 | 75.38 | 49 | 38 | 76.00 | 6½ |
| 49 | 193 | 145 | 75.13 | 51 | 35 | 68.63 | 8½ |
| 50 | 207 | 150 | 72.46 | 52 | 47 | 90.38 | 7 |
| 51 | 192 | 140 | 72.92 | 50 | 40 | 80.00 | 5 |
| 52 | 200 | 153 | 76.50 | 54 | 39 | 72.22 | 8½ |
| 53 | 194 | 135 | 69.59 | 49 | 39 | 81.63 | 5½ |
| 54 | 192 | 140 | 72.92 | 45 | 36 | 80.00 | 1 |
| 55 | 196 | 136 | 69.39 | 46 | 36 | 78.26 | 10 |
| 56 | 190 | 134 | 70.53 | 52 | 37 | 71.15 | 9 |
| 57 | 197 | 143 | 72.59 | 49 | 38 | 77.55 | 12 |
| 58 | 191 | 138 | 72.25 | 51 | 35 | 68.63 | 4½ |
| 59 | 194 | 137 | 70.62 | 52 | 41 | 78.85 | 8½ |
| 60 | 190 | 141 | 74.21 | 53 | 41 | 77.36 | 7½ |
| 61 | 203 | 145 | 71.43 | 48 | 37 | 77.08 | 9½ |
| 62 | 188 | 130 | 69.15 | 45 | 34 | 75.56 | 4 |
| 63 | 188 | 143 | 76.06 | 52 | 37 | 71.15 | 6½ |
| 64 | 187 | 137 | 73.26 | 51 | 34 | 66.67 | 6½ |
| 65 | 196 | 141 | 71.94 | 56 | 40 | 71.43 | 11 |
| 66 | 194 | 148 | 76.29 | 50 | 34 | 64.00 | 6½ |
| 67 | 189 | 158 | 83.60 | 53 | 39 | 73.58 | 5 |
| 68 | 199 | 137 | 68.84 | 51 | 36 | 70.59 | 3 |
| 69 | 193 | 138 | 71.50 | 48 | 39 | 81.25 | 2½ |
| 70 | 197 | 143 | 72.59 | 51 | 38 | 74.51 | 10 |
| 71 | 200 | 145 | 72.50 | 55 | 47 | 85.45 | 11½ |
| 72 | 197 | 145 | 73.60 | 51 | 40 | 78.43 | 8½ |
| 73 | 192 | 147 | 76.56 | 51 | 39 | 76.47 | 8 |
| 74 | 189 | 140 | 74.07 | 53 | 40 | 75.47 | 7½ |
| 75 | 192 | 139 | 72.40 | 51 | 42 | 82.35 | 10 |
| 76 | 196 | 142 | 72.45 | 53 | 39 | 73.58 | 8½ |
| 77 | 192 | 142 | 73.96 | 52 | 43 | 82.69 | 6 |
| 78 | 207 | 152 | 73.43 | 61 | 44 | 72.13 | 11 |
| 79 | 206 | 142 | 68.93 | 58 | 44 | 75.86 | 10½ |
| 80 | 199 | 148 | 74.37 | 54 | 41 | 75.93 | 5½ |
| 81 | 190 | 139 | 73.16 | 48 | 36 | 75.00 | 4 |
| 82 | 197 | 147 | 74.62 | 53 | 37 | 69.81 | 8 |

MASAI—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 83 | 199 | 151 | 75.88 | 51 | 42 | 82.35 | 6½ |
| 84 | 194 | 143 | 73.71 | 51 | 35 | 68.63 | 3 |
| 85 | 198 | 140 | 70.71 | 47 | 36 | 73.47 | 7 |
| 86 | 193 | 137 | 70.98 | 49 | 38 | 77.55 | 8 |
| 87 | 199 | 148 | 74.37 | 47 | 41 | 87.23 | 8½ |
| 88 | 188 | 141 | 75.00 | 50 | 37 | 74.00 | 6½ |
| 89 | 189 | 138 | 73.02 | 54 | 32 | 59.26 | 4½ |
| 90 | 189 | 143 | 75.66 | 53 | 36 | 67.92 | 7 |
| 91 | 196 | 150 | 76.53 | 51 | 45 | 88.24 | 9½ |

NJEMPS.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|----|
| 1 | 196 | 140 | 71.43 | 50 | 42 | 84.00 | 9½ |
| 2 | 197 | 142 | 72.08 | 58 | 37 | 63.79 | 9 |
| 3 | 188 | 143 | 76.06 | 44 | 36 | 81.82 | 6½ |
| 4 | 192 | 138 | 71.88 | 56 | 40 | 71.43 | 8½ |
| 5 | 196 | 142 | 72.45 | 49 | 38 | 77.55 | 11 |
| 6 | 182 | 138 | 75.82 | 49 | 37 | 75.51 | 2½ |
| 7 | 181 | 133 | 73.48 | 49 | 41 | 83.67 | 6 |
| 8 | 193 | 141 | 73.06 | 47 | 42 | 89.36 | 8½ |
| 9 | 191 | 138 | 72.25 | 53 | 38 | 71.70 | 9 |
| 10 | 187 | 135 | 72.19 | 49 | 41 | 83.67 | 7 |
| 11 | 197 | 148 | 75.13 | — | — | — | 9½ |

KAMASIA.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|----|
| 1 | 194 | 137 | 70.62 | 45 | 51 | 91.11 | 8½ |
| 2 | 198 | 146 | 73.74 | 47 | 40 | 85.11 | 12 |
| 3 | 190 | 149 | 78.42 | 54 | 42 | 77.78 | 6½ |
| 4 | 193 | 153 | 79.27 | 46 | 42 | 91.30 | 10 |
| 5 | 193 | 139 | 72.02 | 48 | 39 | 82.25 | 7 |
| 6 | 199 | 142 | 71.36 | 47 | 39 | 82.98 | 7½ |
| 7 | 198 | 148 | 74.75 | 51 | 45 | 88.24 | 12 |
| 8 | 188 | 137 | 72.87 | 42 | 37 | 88.10 | 8½ |
| 9 | 195 | 142 | 72.82 | 47 | 41 | 87.23 | 9½ |
| 10 | 188 | 139 | 73.94 | 46 | 43 | 93.48 | 6½ |

KAMASIA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 11 | 185 | 134 | 72.43 | 47 | 35 | 74.47 | 5 |
| 12 | 184 | 144 | 78.26 | 42 | 42 | 100.00 | 7 |
| 13 | 199 | 139 | 69.85 | 46 | 40 | 86.96 | 6½ |
| 14 | 193 | 147 | 76.17 | 47 | 38 | 80.85 | 5 |
| 15 | 188 | 147 | 78.19 | 48 | 40 | 83.33 | 4½ |
| 16 | 179 | 141 | 78.77 | 42 | 34 | 80.95 | 3½ |
| 17 | 182 | 143 | 78.57 | 45 | 41 | 91.11 | 4 |
| 18 | 206 | 142 | 68.93 | 48 | 46 | 95.83 | 15 |
| 19 | 185 | 140 | 75.68 | 47 | 34 | 72.34 | 9 |
| 20 | 197 | 145 | 73.60 | 52 | 45 | 86.54 | 7 |

SUK.

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|-----|
| 1 | 180 | 145 | 80.56 | 45 | 37 | 82.22 | 1½ |
| 2 | 183 | 143 | 78.14 | 42 | 41 | 97.62 | 7 |
| 3 | 185 | 142 | 76.76 | 43 | 38 | 88.37 | 6¼ |
| 4 | 183 | 142 | 77.60 | 54 | 39 | 72.22 | 11½ |
| 5 | 194 | 143 | 73.71 | 48 | 43 | 89.58 | 5 |
| 6 | 185 | 144 | 77.84 | 51 | 40 | 78.43 | 8 |
| 7 | 190 | 146 | 76.84 | 43 | 43 | 100.00 | 3½ |
| 8 | 193 | 147 | 76.17 | 49 | 40 | 81.63 | 9½ |
| 9 | 188 | 143 | 76.06 | 47 | 46 | 97.87 | 5½ |
| 10 | 183 | 144 | 78.69 | 50 | 35 | 70.00 | 7 |
| 11 | 185 | 141 | 76.22 | 43 | 44 | 102.33 | 7½ |
| 12 | 187 | 145 | 77.54 | 47 | 42 | 89.36 | 5½ |
| 13 | 191 | 152 | 79.58 | 48 | 43 | 89.58 | 6½ |
| 14 | 181 | 135 | 74.59 | 52 | 35 | 67.31 | 5½ |
| 15 | 179 | 140 | 78.21 | 46 | 38 | 82.61 | 1 |

NANDL

| | | | | | | | |
|---|-----|-----|-------|----|----|-------|----|
| 1 | 188 | 147 | 78.19 | — | — | — | 6½ |
| 2 | 193 | 144 | 74.61 | — | — | — | 4½ |
| 3 | 188 | 142 | 75.53 | — | — | — | 5¼ |
| 4 | 187 | 139 | 74.33 | — | — | — | 4½ |
| 5 | 188 | 135 | 71.81 | 47 | 38 | 80.85 | 4½ |

NANDI—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 6 | 185 | 142 | 76.76 | 46 | 34 | 84.78 | 8½ |
| 7 | 183 | 136 | 74.32 | 45 | 35 | 77.78 | 6½ |
| 8 | 192 | 147 | 76.56 | 47 | 35 | 74.47 | 6½ |
| 9 | 192 | 136 | 70.83 | 43 | 39 | 90.70 | 4½ |
| 10 | 182 | 137 | 75.27 | 42 | 41 | 97.62 | 2½ |
| 11 | 193 | 138 | 71.50 | 46 | 42 | 91.80 | 8 |
| 12 | 189 | 143 | 75.66 | 47 | 38 | 80.85 | 7½ |
| 13 | 194 | 140 | 72.16 | 47 | 40 | 85.11 | 9½ |
| 14 | 196 | 139 | 70.92 | 45 | 38 | 84.44 | 6 |

TURKANA.

| | | | | | | | |
|---|-----|-----|-------|----|----|--------|-----|
| 1 | 194 | 143 | 73.71 | 52 | 40 | 76.92 | 9 |
| 2 | 196 | 151 | 77.04 | 55 | 47 | 85.45 | 9 |
| 3 | 187 | 138 | 73.80 | 49 | 50 | 102.04 | 10½ |
| 4 | 187 | 138 | 73.40 | 48 | 42 | 87.50 | 4 |
| 5 | 191 | 145 | 75.92 | 52 | 44 | 84.62 | 9½ |
| 6 | 182 | 133 | 73.08 | 45 | 40 | 88.89 | 0 |
| 7 | 192 | 139 | 72.40 | 48 | 48 | 100.00 | 9 |
| 8 | 187 | 139 | 74.33 | 41 | 40 | 97.56 | 3½ |
| 9 | 184 | 136 | 73.91 | 49 | 42 | 85.71 | 5 |

KACHAMEGA.

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|----|
| 1 | 180 | 143 | 79.44 | 43 | 43 | 100.00 | 8½ |
| 2 | 182 | 143 | 78.57 | 45 | 36 | 80.00 | 3½ |
| 3 | 194 | 150 | 77.32 | 49 | 39 | 79.59 | 3 |
| 4 | 183 | 143 | 78.14 | 44 | 39 | 88.64 | 5½ |
| 5 | 186 | 141 | 75.81 | 48 | 43 | 89.58 | 2½ |
| 6 | 178 | 142 | 79.78 | 40 | 39 | 97.50 | 2½ |
| 7 | 188 | 143 | 76.06 | 45 | 41 | 91.11 | 4½ |
| 8 | 174 | 148 | 85.06 | 44 | 39 | 88.64 | 4½ |
| 9 | 184 | 141 | 76.63 | 42 | 42 | 90.91 | 2½ |
| 10 | 177 | 145 | 81.92 | 50 | 43 | 86.66 | 2 |
| 11 | 178 | 144 | 80.90 | 43 | 40 | 93.02 | 6 |
| 12 | 186 | 145 | 77.96 | 42 | 43 | 102.38 | 5¾ |
| 13 | 180 | 148 | 82.22 | 45 | 39 | 86.67 | 6½ |

KACHAMEGA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 14 | 185 | 150 | 81.08 | 46 | 43 | 93.48 | 6 |
| 15 | 180 | 143 | 79.44 | 49 | 44 | 89.80 | 1 |
| 16 | 188 | 140 | 74.47 | 46 | 41 | 89.13 | 8 |
| 17 | 189 | 144 | 76.19 | 42 | 42 | 100.00 | 2½ |
| 18 | 192 | 156 | 81.25 | 44 | 38 | 86.36 | 4 |
| 19 | 178 | 129 | 78.09 | 42 | 42 | 100.00 | 2½ |
| 20 | 182 | 142 | 78.02 | 47 | 39 | 82.98 | 10 |
| 21 | 184 | 142 | 77.17 | 48 | 43 | 89.58 | 5 |
| 22 | 178 | 152 | 85.39 | 51 | 41 | 80.39 | 11 |
| 23 | 184 | 140 | 76.09 | 47 | 37 | 78.72 | 6 |
| 24 | 181 | 139 | 76.80 | 45 | 39 | 86.67 | 3½ |
| 25 | 192 | 142 | 75.96 | 43 | 38 | 88.37 | 4½ |
| 26 | 181 | 140 | 77.35 | 44 | 40 | 90.91 | 5½ |
| 27 | 184 | 141 | 76.63 | 47 | 40 | 85.11 | 3 |
| 28 | 191 | 136 | 71.20 | 43 | 42 | 92.67 | 7 |
| 29 | 191 | 146 | 76.44 | 47 | 49 | 104.26 | 8 |
| 30 | 178 | 133 | 74.72 | 48 | 39 | 81.25 | 4½ |
| 31 | 183 | 146 | 79.78 | 42 | 40 | 95.24 | 3 |
| 32 | 199 | 154 | 77.39 | 47 | 41 | 87.23 | 3½ |
| 33 | 183 | 140 | 76.50 | 47 | 38 | 80.85 | 7 |
| 34 | 175 | 139 | 79.43 | 44 | 38 | 86.36 | 5½ |
| 35 | 199 | 148 | 74.37 | 54 | 41 | 75.93 | 10½ |
| 36 | 185 | 147 | 79.46 | 49 | 42 | 85.71 | 7 |
| 37 | 200 | 136 | 68.00 | 51 | 41 | 80.39 | 7½ |
| 38 | 183 | 151 | 82.51 | 45 | 41 | 91.11 | 6 |
| 39 | 181 | 145 | 80.11 | 45 | 42 | 93.33 | 7½ |
| 40 | 173 | 136 | 78.61 | 48 | 41 | 85.42 | 8 |
| 41 | 177 | 140 | 79.10 | 45 | 40 | 88.89 | 4 |
| 42 | 189 | 146 | 77.25 | 43 | 40 | 93.02 | 11 |
| 43 | 178 | 141 | 79.21 | 52 | 40 | 76.92 | 8½ |
| 44 | 188 | 139 | 73.94 | 45 | 40 | 88.89 | 7½ |
| 45 | 177 | 140 | 79.10 | 49 | 40 | 81.63 | 8½ |
| 46 | 179 | 146 | 81.56 | 42 | 43 | 102.38 | 0 |
| 47 | 188 | 140 | 74.47 | 42 | 39 | 92.86 | 5 |
| 48 | 189 | 139 | 73.54 | 45 | 40 | 88.89 | 4 |
| 49 | 180 | 148 | 82.22 | 42 | 38 | 90.48 | 4½ |
| 50 | 192 | 148 | 77.08 | 44 | 42 | 95.45 | 6½ |
| 51 | 180 | 143 | 79.44 | 48 | 39 | 81.25 | 7½ |
| 52 | 181 | 141 | 77.90 | 40 | 38 | 95.00 | 8½ |

KACHAMEGA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 53 | 177 | 147 | 83.05 | 51 | 44 | 86.27 | 6½ |
| 54 | 188 | 153 | 81.38 | 44 | 45 | 102.27 | 3 |
| 55 | 192 | 149 | 77.60 | 51 | 43 | 84.31 | 8 |
| 56 | 180 | 142 | 78.89 | 50 | 39 | 78.00 | 3 |
| 57 | 198 | 143 | 72.22 | 45 | 38 | 84.44 | 10½ |
| 58 | 185 | 147 | 79.46 | 43 | 43 | 100.00 | ½ |
| 59 | 190 | 143 | 75.26 | 39 | 39 | 100.00 | 9½ |
| 60 | 192 | 141 | 73.44 | 48 | 39 | 81.25 | 8 |
| 61 | 172 | 142 | 82.56 | 40 | 39 | 97.50 | 7½ |
| 62 | 179 | 141 | 78.77 | 41 | 39 | 95.12 | 3 |
| 63 | 189 | 146 | 77.25 | 49 | 38 | 77.55 | 10½ |
| 64 | 186 | 144 | 77.42 | 46 | 46 | 100.00 | 11½ |
| 65 | 174 | 137 | 78.74 | 43 | 37 | 86.05 | 9 |
| 66 | 194 | 141 | 72.68 | 47 | 38 | 80.85 | 10½ |
| 67 | 179 | 142 | 79.33 | 41 | 38 | 92.68 | 3 |
| 68 | 191 | 152 | 79.58 | 47 | 40 | 85.11 | 9 |
| 69 | 172 | 133 | 77.33 | 40 | 38 | 95.00 | -½ |
| 70 | 179 | 138 | 76.54 | 47 | 37 | 78.72 | 1½ |
| 71 | 192 | 141 | 73.44 | 48 | 38 | 79.17 | 7 |
| 72 | 186 | 144 | 77.42 | 44 | 39 | 88.64 | 8 |
| 73 | 188 | 145 | 77.13 | 52 | 39 | 75.00 | 10 |
| 74 | 189 | 147 | 77.78 | 44 | 40 | 90.91 | 9 |
| 75 | 188 | 138 | 73.40 | 42 | 41 | 97.62 | 5½ |
| 76 | 180 | 141 | 78.33 | 39 | 40 | 102.56 | 6 |
| 77 | 185 | 138 | 74.59 | 44 | 40 | 90.91 | 2 |
| 78 | 182 | 137 | 75.27 | 48 | 37 | 77.08 | 3½ |
| 79 | 178 | 135 | 75.84 | 43 | 45 | 104.65 | 5 |
| 80 | 174 | 138 | 79.31 | 47 | 44 | 93.62 | 11 |
| 81 | 190 | 142 | 74.74 | 46 | 41 | 89.13 | 7 |
| 82 | 189 | 140 | 74.07 | 44 | 37 | 81.82 | 6 |
| 83 | 181 | 141 | 77.90 | 42 | 41 | 97.62 | 2 |
| 84 | 188 | 137 | 72.87 | 41 | 40 | 97.56 | 5½ |
| 85 | 187 | 138 | 73.80 | 47 | 41 | 87.23 | 4½ |
| 86 | 180 | 132 | 73.33 | 46 | 37 | 80.43 | 4½ |
| 87 | 185 | 138 | 74.59 | 40 | 35 | 87.50 | 4½ |
| 88 | 187 | 143 | 76.47 | 41 | 41 | 100.00 | 2 |
| 89 | 187 | 143 | 76.47 | 44 | 37 | 84.09 | 7½ |
| 90 | 177 | 140 | 79.10 | 41 | 41 | 100.00 | 4½ |
| 91 | 192 | 147 | 76.56 | 53 | 46 | 86.79 | 5½ |

KACHAMEGA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|--------------|---------------|-----------------|---------------|----------------|--------------|-------------------------------|
| 92 | 187 | 149 | 73.77 | 43 | 38 | 87.50 | 5½ |
| 93 | 184 | 137 | 74.46 | 44 | 43 | 97.73 | 8 |
| 94 | 187 | 149 | 79.68 | 43 | 38 | 88.37 | 5½ |
| 95 | 177 | 144 | 81.36 | 44 | 43 | 97.73 | 3 |
| 96 | 179 | 141 | 78.77 | 40 | 41 | 102.50 | 1½ |
| 97 | 190 | 146 | 76.84 | 48 | 46 | 95.83 | 6½ |
| 98 | 190 | 151 | 79.49 | 43 | 38 | 88.37 | 7 |
| 99 | 182 | 138 | 75.82 | 47 | 40 | 85.11 | 3 |
| 100 | 181 | 133 | 73.48 | 39 | 39 | 100.00 | 2½ |

KAVIRONDO (NILOTIC).

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|-----|
| 1 | 184 | 153 | 83.15 | — | — | — | 6 |
| 2 | 187 | 133 | 71.12 | — | — | — | 5 |
| 3 | 194 | 149 | 76.80 | — | — | — | 7 |
| 4 | 184 | 144 | 78.26 | — | — | — | 3¼ |
| 5 | 196 | 147 | 75.00 | — | — | — | 8¼ |
| 6 | 184 | 142 | 77.17 | — | — | — | 12½ |
| 7 | 197 | 147 | 74.62 | — | — | — | 7¼ |
| 8 | 181 | 139 | 76.80 | — | — | — | 7¼ |
| 9 | 188 | 143 | 76.06 | — | — | — | 12 |
| 10 | 185 | 140 | 75.68 | 45 | 39 | 86.67 | 2½ |
| 11 | 190 | 141 | 74.21 | 46 | 50 | 108.70 | 10¼ |
| 12 | 188 | 143 | 76.06 | 42 | 44 | 104.76 | 10¼ |
| 13 | 191 | 143 | 74.87 | 43 | 42 | 97.67 | 4½ |
| 14 | 186 | 145 | 77.96 | 41 | 41 | 100.00 | 4½ |
| 15 | 190 | 138 | 72.63 | 47 | 40 | 85.11 | 6½ |
| 16 | 186 | 140 | 75.27 | 47 | 42 | 89.36 | 6 |
| 17 | 182 | 150 | 82.42 | 49 | 43 | 87.76 | 8 |
| 18 | 181 | 140 | 77.35 | 44 | 43 | 97.73 | 4½ |
| 19 | 188 | 135 | 71.81 | 46 | 47 | 102.17 | 3 |
| 20 | 181 | 145 | 80.11 | 49 | 43 | 87.76 | 11½ |
| 21 | 197 | 147 | 74.62 | 50 | 39 | 78.00 | 12 |
| 22 | 184 | 139 | 75.54 | 44 | 45 | 102.27 | 10 |
| 23 | 207 | 145 | 74.61 | 50 | 43 | 86.00 | 8½ |
| 24 | 184 | 150 | 81.52 | 42 | 42 | 100.00 | 9½ |
| 25 | 187 | 145 | 77.54 | 44 | 40 | 90.91 | 8½ |

KAVIRONDO (NILOTIC)—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 26 | 206 | 147 | 71.36 | 45 | 40 | 88.89 | 10½ |
| 27 | 187 | 148 | 79.14 | 44 | 41 | 93.18 | 7½ |
| 28 | 193 | 144 | 70.05 | 47 | 39 | 82.98 | 9½ |
| 29 | 185 | 145 | 78.38 | 49 | 44 | 89.80 | 11½ |
| 30 | 195 | 146 | 74.87 | 44 | 43 | 97.73 | 9 |
| 31 | 182 | 142 | 78.02 | 46 | 43 | 93.48 | 5 |
| 32 | 179 | 140 | 78.21 | 39 | 35 | 89.74 | 4½ |
| 33 | 187 | 142 | 75.94 | 47 | 43 | 91.49 | 8 |
| 34 | 190 | 146 | 76.84 | 43 | 37 | 86.05 | 5 |
| 35 | 184 | 137 | 74.46 | 48 | 39 | 81.25 | 5 |
| 36 | 189 | 148 | 78.31 | 48 | 38 | 79.17 | 7½ |
| 37 | 191 | 139 | 72.77 | 45 | 43 | 95.56 | 9 |

KAVIRONDO (BANTU).

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 192 | 143 | 74.48 | 48 | 48 | 100.00 | 7½ |
| 2 | 188 | 146 | 77.66 | 45 | 43 | 95.56 | 5½ |
| 3 | 197 | 143 | 72.59 | 50 | 45 | 90.00 | 11 |
| 4 | 189 | 140 | 74.07 | 44 | 39 | 88.64 | 6½ |
| 5 | 179 | 139 | 77.65 | 50 | 38 | 76.00 | 9¾ |
| 6 | 186 | 145 | 77.96 | 48 | 41 | 85.42 | 5 |
| 7 | 195 | 137 | 70.26 | 40 | 38 | 95.00 | 4½ |
| 8 | 191 | 140 | 73.30 | 44 | 41 | 93.18 | 7½ |
| 9 | 195 | 141 | 72.31 | 44 | 43 | 97.73 | 7 |
| 10 | 182 | 149 | 81.81 | 41 | 38 | 92.68 | 7 |
| 11 | 183 | 142 | 77.60 | 46 | 41 | 89.13 | 6 |
| 12 | 190 | 147 | 77.37 | 42 | 40 | 95.24 | 4½ |
| 13 | 181 | 136 | 75.14 | 45 | 42 | 93.33 | 2½ |
| 14 | 191 | 139 | 72.63 | 46 | 43 | 93.48 | 2½ |
| 15 | 197 | 143 | 72.59 | 49 | 44 | 89.80 | 8¾ |
| 16 | 190 | 148 | 77.89 | 43 | 44 | 102.33 | 10½ |
| 17 | 196 | 147 | 75.00 | 49 | 43 | 87.76 | 9½ |
| 18 | 193 | 148 | 76.68 | 47 | 43 | 91.49 | 8½ |
| 19 | 189 | 187 | 79.89 | 44 | 44 | 100.00 | 5 |
| 20 | 189 | 145 | 76.72 | 40 | 41 | 102.50 | 6 |
| 21 | 187 | 144 | 77.01 | 43 | 38 | 90.70 | 4½ |
| 22 | 198 | 149 | 75.25 | 42 | 40 | 95.24 | 5½ |
| 23 | 190 | 146 | 76.84 | 43 | 46 | 106.98 | 5½ |
| 24 | 190 | 142 | 74.74 | 45 | 44 | 97.78 | 9 |

BAGANDA.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 189 | 141 | 74.60 | — | — | — | 3½ |
| 2 | 192 | 144 | 75.00 | — | — | — | 5 |
| 3 | 180 | 148 | 82.22 | — | — | — | 5½ |
| 4 | 187 | 135 | 72.19 | — | — | — | 5 |
| 5 | 194 | 142 | 73.20 | — | — | — | 3½ |
| 6 | 171 | 134 | 78.36 | — | — | — | 1½ |
| 7 | 195 | 150 | 76.92 | — | — | — | 5½ |
| 8 | 189 | 148 | 77.89 | — | — | — | 4½ |
| 9 | 178 | 138 | 77.53 | — | — | — | 2 |
| 10 | 193 | 140 | 72.54 | — | — | — | 8½ |
| 11 | 191 | 139 | 72.77 | — | — | — | 5 |
| 12 | 179 | 141 | 78.77 | — | — | — | 3 |
| 13 | 180 | 140 | 77.78 | 43 | 43 | 100.00 | 4 |
| 14 | 186 | 149 | 80.11 | 43 | 45 | 104.65 | 5½ |
| 15 | 186 | 141 | 75.81 | 44 | 42 | 95.45 | 7 |
| 16 | 199 | 144 | 72.36 | 45 | 43 | 95.56 | 9 |
| 17 | 198 | 146 | 73.74 | 44 | 44 | 100.00 | 6½ |
| 18 | 187 | 142 | 75.94 | 42 | 41 | 97.62 | 4½ |
| 19 | 191 | 143 | 74.87 | 45 | 45 | 100.00 | 4 |
| 20 | 192 | 146 | 76.04 | 48 | 44 | 91.67 | 6½ |
| 21 | 188 | 134 | 71.28 | 45 | 38 | 84.44 | 5½ |
| 22 | 197 | 144 | 73.10 | 45 | 41 | 91.11 | 8½ |
| 23 | 194 | 149 | 76.80 | 43 | 39 | 90.70 | 5½ |
| 24 | 202 | 150 | 74.26 | 48 | 46 | 95.83 | 4 |
| 25 | 196 | 145 | 73.98 | 48 | 44 | 91.67 | 8½ |
| 26 | 193 | 144 | 74.61 | 53 | 41 | 77.36 | 6½ |
| 27 | 198 | 148 | 74.75 | 46 | 46 | 100.00 | 9 |
| 28 | 204 | 150 | 73.89 | 46 | 47 | 102.17 | 2½ |
| 29 | 194 | 139 | 71.65 | 42 | 42 | 100.00 | 6½ |
| 30 | 200 | 151 | 75.50 | 44 | 46 | 102.27 | 7½ |
| 31 | 190 | 141 | 74.21 | 44 | 41 | 93.18 | 2 |
| 32 | 183 | 143 | 78.14 | 43 | 42 | 97.67 | 6 |
| 33 | 184 | 137 | 74.46 | 42 | 43 | 102.38 | 6½ |
| 34 | 198 | 140 | 70.71 | 44 | 43 | 97.73 | 7 |
| 35 | 195 | 139 | 71.28 | 46 | 44 | 95.65 | 4½ |
| 36 | 201 | 141 | 70.15 | 46 | 47 | 102.17 | 4 |
| 37 | 188 | 149 | 79.26 | 45 | 44 | 97.78 | 7½ |
| 38 | 183 | 138 | 75.41 | 43 | 44 | 102.33 | 6½ |
| 39 | 196 | 143 | 72.96 | 48 | 41 | 85.42 | 8 |

BAGANDA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 40 | 209 | 149 | 71.29 | 48 | 44 | 91.67 | 9½ |
| 41 | 192 | 140 | 72.92 | 47 | 42 | 89.36 | 5½ |
| 42 | 189 | 148 | 78.31 | 43 | 38 | 88.37 | 4½ |
| 43 | 187 | 142 | 75.94 | 41 | 40 | 97.56 | 3½ |
| 44 | 198 | 143 | 72.22 | 42 | 40 | 95.24 | 7½ |

KASERI.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|----|
| 1 | 197 | 144 | 73.10 | 51 | 40 | 78.43 | 6 |
| 2 | 196 | 146 | 74.49 | 57 | 41 | 71.93 | 8½ |
| 3 | 201 | 146 | 72.64 | 48 | 42 | 87.50 | 8½ |
| 4 | 182 | 137 | 75.27 | 53 | 42 | 79.25 | 8 |
| 5 | 188 | 134 | 71.28 | 51 | 40 | 78.43 | 7½ |
| 6 | 185 | 136 | 73.51 | 45 | 41 | 91.11 | 3½ |
| 7 | 185 | 147 | 79.46 | 48 | 38 | 79.17 | 8 |
| 8 | 181 | 142 | 78.45 | 51 | 39 | 76.47 | 4 |
| 9 | 189 | 150 | 79.37 | 43 | 42 | 97.67 | 9 |
| 10 | 195 | 135 | 69.23 | 48 | 41 | 85.42 | 5½ |
| 11 | 189 | 139 | 73.54 | 47 | 39 | 82.98 | 7 |
| 12 | 193 | 140 | 72.54 | 47 | 39 | 82.98 | 6 |

SUKUMA.

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|-----|
| 1 | 192 | 146 | 76.04 | — | — | — | 6½ |
| 2 | 195 | 146 | 74.87 | — | — | — | 9½ |
| 3 | 197 | 142 | 72.08 | — | — | — | 11½ |
| 4 | 197 | 142 | 72.08 | 50 | 47 | 94.00 | 6½ |
| 5 | 188 | 148 | 78.72 | 49 | 45 | 91.84 | 6 |
| 6 | 196 | 147 | 75.00 | 45 | 45 | 100.00 | 7 |
| 7 | 176 | 135 | 76.70 | 45 | 39 | 86.67 | 2 |
| 8 | 190 | 147 | 77.37 | 49 | 44 | 89.80 | 7 |
| 9 | 186 | 143 | 76.88 | 46 | 45 | 97.83 | 8 |
| 10 | 185 | 143 | 77.30 | 47 | 44 | 93.62 | 5½ |
| 11 | 190 | 151 | 79.06 | 49 | 43 | 87.76 | 8½ |
| 12 | 190 | 145 | 76.32 | 50 | 50 | 100.00 | 8½ |
| 13 | 188 | 146 | 77.66 | 49 | 49 | 100.00 | 15 |

SUKUMA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 14 | 190 | 143 | 75.26 | 52 | 41 | 78.85 | 6 |
| 15 | 198 | 141 | 71.21 | 49 | 35 | 71.43 | 8½ |
| 16 | 202 | 148 | 73.27 | 53 | 40 | 75.47 | 7 |
| 17 | 182 | 142 | 78.02 | 43 | 43 | 100.00 | 5 |
| 18 | 192 | 147 | 76.56 | 43 | 44 | 102.33 | 6 |
| 19 | 198 | 144 | 72.73 | 48 | 50 | 104.17 | 4½ |
| 20 | 202 | 150 | 74.26 | 56 | 38 | 67.86 | 6½ |
| 21 | 185 | 137 | 74.05 | 53 | 40 | 75.47 | 10 |

WANYAMWEZI.

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|----|
| 1 | 190 | 147 | 77.37 | 47 | 43 | 91.49 | 5½ |
| 2 | 192 | 144 | 75.00 | 43 | 42 | 97.67 | 6½ |
| 3 | 198 | 151 | 76.26 | 48 | 39 | 81.25 | 8½ |
| 4 | 198 | 142 | 71.72 | 50 | 44 | 88.00 | 8 |
| 5 | 189 | 151 | 79.89 | 48 | 42 | 87.50 | 3½ |
| 6 | 186 | 147 | 79.03 | 46 | 45 | 97.83 | 3½ |
| 7 | 200 | 149 | 74.50 | 48 | 45 | 93.75 | 8½ |
| 8 | 187 | 154 | 82.35 | 47 | 43 | 91.49 | 4 |
| 9 | 176 | 141 | 80.11 | 47 | 39 | 82.98 | 4 |
| 10 | 187 | 142 | 75.94 | 48 | 46 | 95.83 | 3½ |
| 11 | 186 | 141 | 75.81 | 48 | 41 | 85.42 | 2 |
| 12 | 195 | 147 | 75.38 | 49 | 43 | 87.76 | 2½ |
| 13 | 191 | 145 | 75.92 | 51 | 47 | 92.16 | 7 |
| 14 | 189 | 145 | 76.72 | 48 | 38 | 79.17 | 4½ |
| 15 | 196 | 147 | 75.00 | 53 | 44 | 83.02 | 4½ |
| 16 | 197 | 147 | 74.62 | 48 | 45 | 93.75 | 2½ |
| 17 | 193 | 141 | 73.06 | 46 | 41 | 89.13 | 4 |
| 18 | 181 | 141 | 77.90 | 47 | 38 | 80.85 | 5½ |
| 19 | 204 | 143 | 70.10 | 46 | 47 | 102.17 | 8 |
| 20 | 203 | 150 | 73.89 | 48 | 45 | 93.75 | 4½ |
| 21 | 189 | 150 | 79.37 | 44 | 41 | 93.18 | 3½ |
| 22 | 190 | 150 | 78.95 | 52 | 47 | 90.38 | 4½ |
| 23 | 197 | 152 | 77.16 | 45 | 39 | 86.67 | 11 |
| 24 | 185 | 138 | 74.59 | 40 | 38 | 95.00 | 8½ |
| 25 | 190 | 146 | 76.84 | 48 | 45 | 93.75 | 6 |
| 26 | 189 | 147 | 77.78 | 41 | 39 | 95.12 | 5½ |
| 27 | 188 | 137 | 72.87 | 45 | 36 | 80.00 | 6 |

WANYAMWEZI—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 28 | 186 | 143 | 76.88 | 45 | 47 | 104.44 | 6 |
| 29 | 193 | 146 | 75.65 | 46 | 46 | 100.00 | 7 |
| 30 | 204 | 143 | 70.10 | 52 | 44 | 87.62 | 7½ |
| 31 | 195 | 148 | 75.90 | 52 | 40 | 76.92 | 10 |
| 32 | 197 | 148 | 75.51 | 50 | 51 | 102.00 | 8½ |
| 33 | 183 | 140 | 76.50 | 50 | 43 | 86.00 | 5½ |
| 34 | 188 | 137 | 72.87 | 46 | 40 | 86.96 | 7½ |
| 35 | 200 | 144 | 72.00 | 51 | 44 | 86.27 | 5 |
| 36 | 188 | 142 | 75.53 | 48 | 45 | 93.75 | 5 |
| 37 | 196 | 147 | 72.87 | 47 | 46 | 97.87 | 5½ |
| 38 | 192 | 147 | 76.56 | 52 | 44 | 87.62 | 4½ |
| 39 | 201 | 138 | 68.66 | 48 | 48 | 100.00 | 7 |
| 40 | 186 | 139 | 74.73 | 48 | 40 | 83.33 | 6½ |
| 41 | 184 | 139 | 75.54 | 46 | 39 | 84.78 | 4½ |
| 42 | 183 | 147 | 80.33 | 49 | 45 | 91.84 | 4 |
| 43 | 191 | 139 | 72.77 | 51 | 44 | 86.27 | 9 |
| 44 | 195 | 144 | 73.85 | 54 | 38 | 70.37 | 9½ |
| 45 | 191 | 149 | 78.01 | — | — | — | 3¼ |
| 46 | 184 | 149 | 80.98 | — | — | — | 6¼ |
| 47 | 189 | 143 | 75.66 | — | — | — | 5¼ |
| 48 | 201 | 142 | 70.65 | — | — | — | 5 |
| 49 | 203 | 150 | 73.89 | — | — | — | 10½ |
| 50 | 193 | 148 | 76.68 | — | — | — | 4 |
| 51 | 192 | 139 | 72.40 | — | — | — | 8¾ |
| 52 | 191 | 140 | 73.30 | — | — | — | 8¼ |
| 53 | 187 | 144 | 77.01 | — | — | — | 4½ |
| 54 | 196 | 148 | 75.51 | — | — | — | 6¾ |
| 55 | 196 | 148 | 75.51 | — | — | — | 4 |
| 56 | 195 | 146 | 74.87 | — | — | — | 7½ |
| 57 | 200 | 149 | 74.50 | — | — | — | 9½ |
| 58 | 181 | 146 | 80.66 | — | — | — | 7 |
| 59 | 198 | 149 | 75.25 | — | — | — | 4½ |
| 60 | 191 | 146 | 76.44 | — | — | — | 5½ |
| 61 | 192 | 141 | 73.44 | — | — | — | 6¾ |
| 62 | 192 | 145 | 75.52 | — | — | — | 7 |
| 63 | 191 | 144 | 75.39 | — | — | — | 6 |
| 64 | 195 | 153 | 78.46 | — | — | — | 3¾ |
| 65 | 191 | 148 | 77.49 | — | — | — | 8 |
| 66 | 189 | 148 | 78.31 | — | — | — | 5½ |

WANYAMWEZI—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 67 | 190 | 144 | 75.79 | — | — | — | 9 $\frac{3}{4}$ |
| 68 | 196 | 140 | 71.43 | — | — | — | 4 $\frac{3}{4}$ |
| 69 | 190 | 138 | 72.63 | — | — | — | 7 $\frac{1}{4}$ |
| 70 | 188 | 150 | 79.79 | — | — | — | 5 $\frac{1}{4}$ |
| 71 | 188 | 142 | 75.53 | — | — | — | 6 $\frac{1}{4}$ |
| 72 | 188 | 143 | 76.06 | — | — | — | 4 |
| 73 | 194 | 143 | 73.71 | — | — | — | 4 |
| 74 | 189 | 138 | 73.02 | — | — | — | 6 $\frac{1}{4}$ |
| 75 | 197 | 141 | 71.57 | — | — | — | 6 |
| 76 | 193 | 149 | 77.20 | — | — | — | 5 $\frac{3}{4}$ |
| 77 | 187 | 144 | 77.01 | — | — | — | 8 $\frac{1}{4}$ |
| 78 | 196 | 146 | 74.49 | — | — | — | 6 $\frac{1}{2}$ |
| 79 | 185 | 139 | 75.14 | — | — | — | 6 |
| 80 | 182 | 137 | 75.27 | — | — | — | 4 $\frac{1}{2}$ |
| 81 | 184 | 142 | 77.17 | — | — | — | 6 $\frac{1}{4}$ |
| 82 | 190 | 153 | 80.53 | — | — | — | 3 |
| 83 | 181 | 141 | 77.90 | — | — | — | 7 $\frac{1}{4}$ |
| 84 | 184 | 144 | 78.26 | — | — | — | 6 |
| 85 | 196 | 145 | 73.98 | — | — | — | 5 $\frac{3}{4}$ |
| 86 | 181 | 139 | 76.80 | — | — | — | $\frac{1}{4}$ |
| 87 | 186 | 147 | 79.03 | — | — | — | 6 |
| 88 | 198 | 143 | 72.22 | — | — | — | 5 $\frac{3}{4}$ |
| 89 | 186 | 141 | 75.81 | — | — | — | 5 $\frac{3}{4}$ |
| 90 | 189 | 142 | 75.13 | — | — | — | 6 $\frac{1}{2}$ |
| 91 | 188 | 154 | 81.91 | — | — | — | 5 $\frac{1}{4}$ |
| 92 | 191 | 143 | 74.87 | — | — | — | 8 $\frac{1}{4}$ |
| 93 | 191 | 149 | 78.01 | — | — | — | 2 $\frac{1}{2}$ |
| 94 | 192 | 142 | 73.96 | — | — | — | 9 |
| 95 | 190 | 153 | 80.53 | — | — | — | 3 |
| 96 | 190 | 139 | 73.16 | — | — | — | 6 $\frac{1}{4}$ |
| 97 | 198 | 151 | 76.26 | — | — | — | 6 $\frac{1}{4}$ |
| 98 | 185 | 142 | 76.76 | — | — | — | 2 |
| 99 | 184 | 143 | 77.72 | — | — | — | 6 $\frac{1}{4}$ |
| 100 | 190 | 143 | 75.26 | — | — | — | 7 $\frac{1}{4}$ |
| 101 | 189 | 143 | 75.66 | — | — | — | 7 $\frac{1}{4}$ |

NYASA.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 191 | 156 | 81.68 | — | — | — | 6 |
| 2 | 197 | 148 | 75.13 | — | — | — | 5½ |
| 3 | 188 | 143 | 76.06 | — | — | — | 2½ |
| 4 | 181 | 143 | 79.01 | — | — | — | 4½ |
| 5 | 187 | 141 | 75.40 | — | — | — | 3½ |
| 6 | 182 | 142 | 78.02 | — | — | — | 2½ |
| 7 | 182 | 144 | 79.12 | — | — | — | 5½ |
| 8 | 189 | 140 | 74.07 | — | — | — | 6½ |
| 9 | 200 | 146 | 73.00 | — | — | — | 8½ |
| 10 | 192 | 142 | 73.96 | — | — | — | 6 |
| 11 | 191 | 141 | 73.82 | — | — | — | 5½ |
| 12 | 191 | 143 | 74.87 | — | — | — | 5½ |
| 13 | 197 | 147 | 74.62 | — | — | — | 8½ |
| 14 | 185 | 142 | 76.76 | — | — | — | 3½ |
| 15 | 192 | 142 | 73.96 | — | — | — | 3½ |
| 16 | 193 | 142 | 73.58 | — | — | — | 3½ |
| 17 | 196 | 146 | 74.49 | — | — | — | 7½ |
| 18 | 185 | 140 | 75.68 | — | — | — | 1½ |
| 19 | 184 | 140 | 76.09 | — | — | — | ½ |
| 20 | 180 | 136 | 73.12 | — | — | — | -2 |
| 21 | 198 | 143 | 72.22 | — | — | — | 6 |

AJAWA.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 195 | 146 | 74.87 | — | — | — | 8½ |
| 2 | 184 | 142 | 77.17 | — | — | — | 5 |
| 3 | 185 | 143 | 77.30 | — | — | — | 1½ |
| 4 | 190 | 143 | 75.26 | — | — | — | 8 |
| 5 | 193 | 145 | 75.13 | — | — | — | 7½ |
| 6 | 190 | 145 | 76.32 | — | — | — | ¾ |
| 7 | 195 | 142 | 72.82 | — | — | — | 7½ |
| 8 | 193 | 138 | 71.50 | — | — | — | 7 |
| 9 | 199 | 150 | 75.38 | — | — | — | 5½ |
| 10 | 189 | 155 | 82.01 | — | — | — | 4½ |
| 11 | 196 | 150 | 76.53 | — | — | — | 3½ |
| 12 | 193 | 143 | 74.09 | — | — | — | 3 |
| 13 | 198 | 152 | 76.77 | — | — | — | 4½ |

AJAWA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 14 | 192 | 143 | 74.48 | — | — | — | 5 |
| 15 | 191 | 144 | 75.39 | 46 | 41 | 89.13 | 2 |
| 16 | 204 | 151 | 74.02 | 44 | 43 | 97.73 | 7½ |

SEGEJU.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 197 | 135 | 68.53 | — | — | — | 6½ |
| 2 | 190 | 143 | 75.26 | — | — | — | 7½ |
| 3 | 194 | 147 | 75.77 | — | — | — | 4½ |
| 4 | 187 | 151 | 80.75 | — | — | — | 2½ |
| 5 | 202 | 141 | 69.80 | — | — | — | 9½ |
| 6 | 187 | 150 | 80.21 | — | — | — | 5½ |
| 7 | 201 | 144 | 71.64 | — | — | — | 6½ |
| 8 | 190 | 149 | 78.42 | — | — | — | 5½ |
| 9 | 189 | 142 | 75.13 | — | — | — | 5½ |
| 10 | 183 | 141 | 77.05 | — | — | — | 4 |
| 11 | 191 | 143 | 74.87 | — | — | — | 5½ |
| 12 | 185 | 147 | 79.46 | — | — | — | 6 |
| 13 | 188 | 137 | 72.87 | — | — | — | 3½ |
| 14 | 192 | 144 | 75.00 | — | — | — | 4½ |
| 15 | 193 | 143 | 74.09 | — | — | — | 3 |
| 16 | 191 | 137 | 71.73 | — | — | — | 4½ |
| 17 | 191 | 147 | 76.96 | — | — | — | 6½ |
| 18 | 199 | 139 | 69.85 | — | — | — | 8 |
| 19 | 190 | 143 | 75.26 | — | — | — | ¾ |
| 20 | 196 | 149 | 75.51 | — | — | — | 5½ |
| 21 | 186 | 143 | 71.51 | — | — | — | 4½ |
| 22 | 199 | 139 | 69.85 | — | — | — | 6½ |
| 23 | 187 | 133 | 71.12 | — | — | — | 5 |
| 24 | 191 | 143 | 74.87 | — | — | — | 5½ |
| 25 | 192 | 142 | 73.96 | — | — | — | 5½ |
| 26 | 200 | 146 | 73.00 | — | — | — | 1 |
| 27 | 195 | 148 | 75.90 | — | — | — | 6½ |
| 28 | 191 | 146 | 76.44 | — | — | — | 2½ |
| 29 | 195 | 148 | 75.90 | — | — | — | 6½ |
| 30 | 191 | 146 | 76.44 | — | — | — | 2½ |
| 31 | 186 | 148 | 79.57 | — | — | — | 6½ |

SEGEJU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|--------------|---------------|-----------------|---------------|----------------|--------------|-------------------------------|
| 32 | 188 | 146 | 77.66 | — | — | — | 1½ |
| 33 | 189 | 143 | 75.66 | — | — | — | 6½ |
| 34 | 200 | 137 | 68.50 | 51 | 44 | 86.27 | 6½ |
| 35 | 184 | 147 | 79.89 | 47 | 39 | 82.98 | 4 |
| 36 | 201 | 150 | 74.63 | 49 | 47 | 95.92 | 9 |

SEGUA.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|----|
| 1 | 189 | 156 | 82.54 | — | — | — | 4 |
| 2 | 200 | 145 | 72.50 | — | — | — | 5½ |
| 3 | 200 | 146 | 73.00 | — | — | — | 6½ |
| 4 | 179 | 134 | 74.86 | — | — | — | 5½ |
| 5 | 193 | 149 | 77.20 | — | — | — | 8 |
| 6 | 201 | 140 | 69.65 | — | — | — | 5½ |
| 7 | 194 | 148 | 76.29 | — | — | — | 4½ |
| 8 | 191 | 150 | 78.53 | — | — | — | 7 |
| 9 | 194 | 153 | 79.27 | — | — | — | 6 |
| 10 | 194 | 143 | 73.71 | — | — | — | 4½ |
| 11 | 183 | 138 | 75.41 | 50 | 41 | 82.00 | 5½ |
| 12 | 198 | 146 | 73.74 | 53 | 42 | 79.25 | 7 |

SWAHILI.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 180 | 140 | 77.78 | — | — | — | 1 |
| 2 | 183 | 140 | 76.50 | — | — | — | 1½ |
| 3 | 191 | 136 | 71.20 | — | — | — | 6½ |
| 4 | 188 | 148 | 78.72 | — | — | — | 3½ |
| 5 | 177 | 141 | 79.66 | — | — | — | 4½ |
| 6 | 193 | 144 | 74.61 | — | — | — | 2 |
| 7 | 187 | 145 | 77.54 | — | — | — | 3 |
| 8 | 190 | 143 | 75.26 | — | — | — | 5 |
| 9 | 183 | 139 | 75.96 | — | — | — | 5½ |
| 10 | 194 | 153 | 78.87 | — | — | — | 4½ |
| 11 | 180 | 141 | 78.33 | — | — | — | 5½ |
| 12 | 191 | 146 | 76.44 | — | — | — | 1½ |
| 13 | 194 | 155 | 79.90 | — | — | — | 9½ |
| 14 | 190 | 141 | 74.21 | — | — | — | 1½ |

SWAHILI—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 15 | 185 | 144 | 77·84 | — | — | — | 4 |
| 16 | 189 | 147 | 77·78 | — | — | — | 6 |
| 17 | 204 | 153 | 75·00 | — | — | — | 9 |
| 18 | 200 | 147 | 73·50 | — | — | — | 4½ |
| 19 | 193 | 157 | 81·35 | — | — | — | 5 |
| 20 | 194 | 149 | 76·80 | — | — | — | 6½ |
| 21 | 183 | 137 | 74·86 | — | — | — | 2½ |
| 22 | 195 | 145 | 74·36 | — | — | — | 5½ |
| 23 | 172 | 143 | 83·14 | — | — | — | 2½ |
| 24 | 185 | 139 | 75·14 | — | — | — | 5½ |
| 25 | 192 | 140 | 72·93 | — | — | — | 3½ |
| 26 | 189 | 146 | 77·25 | — | — | — | 3 |
| 27 | 205 | 145 | 71·08 | — | — | — | 6½ |
| 28 | 195 | 142 | 72·82 | — | — | — | 3½ |
| 29 | 177 | 140 | 79·10 | — | — | — | 4½ |
| 30 | 178 | 148 | 83·15 | — | — | — | 5½ |
| 31 | 190 | 136 | 71·58 | — | — | — | 5 |
| 32 | 179 | 144 | 80·45 | — | — | — | 2½ |
| 33 | 190 | 146 | 76·84 | — | — | — | 5½ |
| 34 | 192 | 145 | 75·52 | — | — | — | 10½ |
| 35 | 186 | 142 | 76·34 | — | — | — | 5½ |
| 36 | 195 | 150 | 76·92 | — | — | — | 4½ |
| 37 | 185 | 136 | 73·51 | — | — | — | 6 |
| 38 | 187 | 145 | 77·54 | — | — | — | 7½ |
| 39 | 193 | 145 | 75·13 | — | — | — | 6½ |
| 40 | 193 | 146 | 75·65 | — | — | — | 5½ |
| 41 | 197 | 154 | 78·17 | — | — | — | 7 |
| 42 | 187 | 145 | 77·54 | — | — | — | 3½ |
| 43 | 187 | 149 | 79·69 | — | — | — | 6½ |
| 44 | 200 | 153 | 76·50 | — | — | — | 6½ |
| 45 | 199 | 153 | 76·88 | 47 | 43 | 91·49 | 5½ |
| 46 | 189 | 146 | 77·25 | 48 | 42 | 87·50 | 1½ |
| 47 | 186 | 150 | 80·65 | 52 | 40 | 76·92 | 4½ |
| 48 | 187 | 138 | 73·80 | 49 | 40 | 81·63 | 2 |
| 49 | 181 | 143 | 79·01 | 46 | 43 | 93·48 | 6 |
| 50 | 181 | 141 | 77·90 | 48 | 43 | 89·58 | 4½ |
| 51 | 201 | 153 | 76·12 | 45 | 42 | 88·89 | 4 |
| 52 | 194 | 144 | 74·23 | 46 | 43 | 93·48 | 6 |
| 53 | 201 | 142 | 70·65 | 54 | 44 | 81·48 | 5½ |

LAMU.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 190 | 158 | 83.16 | — | — | — | 5½ |
| 2 | 184 | 155 | 84.24 | — | — | — | 4 |
| 3 | 184 | 144 | 78.26 | — | — | — | 6 |
| 4 | 184 | 141 | 76.63 | — | — | — | 3 |
| 5 | 190 | 145 | 76.32 | — | — | — | 7 |
| 6 | 196 | 148 | 75.51 | — | — | — | 6½ |
| 7 | 182 | 134 | 73.63 | — | — | — | 2 |
| 8 | 194 | 146 | 75.26 | — | — | — | 0 |
| 9 | 183 | 150 | 81.97 | — | — | — | 7½ |
| 10 | 191 | 147 | 76.96 | — | — | — | 6½ |
| 11 | 189 | 143 | 75.66 | — | — | — | 6½ |
| 12 | 180 | 144 | 80.00 | — | — | — | 5½ |
| 13 | 187 | 143 | 76.47 | — | — | — | 4½ |
| 14 | 186 | 151 | 81.18 | — | — | — | 3 |
| 15 | 177 | 149 | 84.18 | — | — | — | 3½ |
| 16 | 187 | 149 | 79.68 | — | — | — | 4 |
| 17 | 180 | 147 | 81.67 | — | — | — | 3 |
| 18 | 189 | 143 | 75.66 | — | — | — | 4½ |
| 19 | 186 | 146 | 78.49 | — | — | — | 4½ |
| 20 | 186 | 141 | 75.81 | — | — | — | 5 |
| 21 | 182 | 145 | 79.67 | — | — | — | 5 |
| 22 | 188 | 148 | 78.72 | — | — | — | 4½ |
| 23 | 188 | 148 | 78.72 | — | — | — | 4½ |
| 24 | 195 | 143 | 73.33 | — | — | — | 1 |
| 25 | 183 | 144 | 78.69 | — | — | — | 4 |
| 26 | 193 | 152 | 79.17 | 54 | 45 | 83.33 | 5½ |

RABAI.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|---|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 198 | 142 | 71.72 | — | — | — | 9½ |
| 2 | 173 | 136 | 78.61 | — | — | — | 0 |
| 3 | 190 | 145 | 76.32 | — | — | — | 3½ |
| 4 | 194 | 151 | 77.84 | — | — | — | 5 |
| 5 | 191 | 150 | 78.53 | — | — | — | 2½ |
| 6 | 189 | 152 | 80.42 | — | — | — | 2½ |
| 7 | 175 | 137 | 78.29 | — | — | — | 1½ |
| 8 | 191 | 140 | 73.30 | — | — | — | 1½ |

RABAI—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 9 | 189 | 143 | 75.66 | — | — | — | $\frac{1}{2}$ |
| 10 | 190 | 146 | 76.84 | — | — | — | 3 $\frac{1}{4}$ |
| 11 | 183 | 136 | 74.32 | — | — | — | 7 $\frac{1}{4}$ |
| 12 | 193 | 145 | 74.09 | — | — | — | 9 $\frac{1}{2}$ |
| 13 | 197 | 148 | 75.13 | 48 | 42 | 87.50 | 5 $\frac{1}{2}$ |

DIGO.

| | | | | | | | |
|----|-----|-----|-------|----|----|--------|-----------------|
| 1 | 193 | 139 | 72.02 | — | — | — | 2 $\frac{1}{4}$ |
| 2 | 188 | 138 | 77.53 | — | — | — | 3 $\frac{1}{2}$ |
| 3 | 185 | 142 | 76.76 | — | — | — | 6 $\frac{1}{2}$ |
| 4 | 189 | 148 | 78.31 | — | — | — | 5 $\frac{1}{2}$ |
| 5 | 172 | 134 | 77.91 | — | — | — | 2 $\frac{1}{4}$ |
| 6 | 191 | 141 | 74.21 | — | — | — | 3 $\frac{1}{2}$ |
| 7 | 184 | 143 | 77.72 | — | — | — | 4 $\frac{1}{4}$ |
| 8 | 188 | 143 | 76.06 | — | — | — | 3 $\frac{1}{4}$ |
| 9 | 191 | 139 | 72.77 | — | — | — | 3 $\frac{1}{2}$ |
| 10 | 194 | 148 | 76.29 | — | — | — | 4 $\frac{1}{4}$ |
| 11 | 195 | 156 | 80.00 | 44 | 42 | 95.45 | 4 $\frac{1}{4}$ |
| 12 | 189 | 139 | 73.54 | 47 | 43 | 91.49 | 3 $\frac{1}{4}$ |
| 13 | 201 | 149 | 74.13 | 49 | 50 | 102.04 | 7 $\frac{1}{2}$ |
| 14 | 188 | 141 | 75.00 | 46 | 41 | 89.13 | 2 $\frac{1}{2}$ |
| 15 | 185 | 143 | 77.30 | 47 | 42 | 89.36 | 3 $\frac{1}{2}$ |

DUEUMA.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|------------------|
| 1 | 194 | 151 | 77.84 | — | — | — | 11 $\frac{1}{2}$ |
| 2 | 184 | 147 | 79.89 | — | — | — | 3 $\frac{1}{4}$ |
| 3 | 188 | 144 | 76.69 | — | — | — | 3 $\frac{1}{4}$ |
| 4 | 190 | 138 | 72.63 | — | — | — | 4 $\frac{1}{4}$ |
| 5 | 174 | 138 | 79.31 | — | — | — | 6 $\frac{1}{4}$ |
| 6 | 185 | 149 | 80.54 | — | — | — | 4 $\frac{1}{2}$ |
| 7 | 189 | 148 | 78.31 | — | — | — | 8 $\frac{1}{2}$ |
| 8 | 186 | 144 | 77.42 | — | — | — | $\frac{3}{4}$ |
| 9 | 194 | 144 | 74.23 | — | — | — | 1 |
| 10 | 187 | 139 | 74.33 | — | — | — | 4 $\frac{1}{2}$ |

DURUMA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 11 | 182 | 134 | 73.63 | — | — | — | 3½ |
| 12 | 196 | 144 | 73.47 | — | — | — | 5 |
| 13 | 187 | 138 | 73.80 | — | — | — | 6¼ |
| 14 | 191 | 143 | 75.92 | — | — | — | 6¼ |
| 15 | 185 | 148 | 80.00 | — | — | — | 2 |
| 16 | 188 | 140 | 74.47 | — | — | — | 6¼ |
| 17 | 200 | 143 | 71.50 | — | — | — | 6¾ |
| 18 | 198 | 152 | 76.77 | — | — | — | 6 |
| 19 | 180 | 137 | 76.11 | — | — | — | 7¾ |
| 20 | 181 | 140 | 77.35 | — | — | — | 4¾ |
| 21 | 181 | 140 | 78.02 | — | — | — | 6¼ |
| 22 | 197 | 149 | 75.63 | — | — | — | 5½ |
| 23 | 196 | 150 | 76.53 | — | — | — | 5 |
| 24 | 194 | 143 | 73.71 | — | — | — | 5¼ |
| 25 | 187 | 142 | 75.94 | — | — | — | 6 |
| 26 | 194 | 143 | 73.71 | — | — | — | 5¼ |
| 27 | 180 | 140 | 77.78 | — | — | — | 3½ |
| 28 | 189 | 134 | 69.84 | — | — | — | 4½ |
| 29 | 184 | 140 | 76.09 | — | — | — | 2¾ |
| 30 | 182 | 137 | 75.27 | — | — | — | 9½ |
| 31 | 190 | 144 | 75.79 | — | — | — | 3¼ |
| 32 | 186 | 142 | 76.34 | — | — | — | 4¼ |
| 33 | 187 | 141 | 75.40 | — | — | — | 4½ |
| 34 | 191 | 138 | 78.21 | — | — | — | 2¾ |
| 35 | 193 | 147 | 76.17 | — | — | — | 2¼ |
| 36 | 199 | 150 | 75.38 | — | — | — | 5 |
| 37 | 183 | 143 | 78.14 | — | — | — | 4¼ |
| 38 | 189 | 147 | 77.78 | — | — | — | 5¼ |
| 39 | 180 | 133 | 73.89 | — | — | — | 4¼ |
| 40 | 190 | 150 | 78.95 | — | — | — | 4¾ |
| 41 | 188 | 135 | 71.81 | — | — | — | 5¾ |
| 42 | 181 | 139 | 76.80 | — | — | — | 1¾ |
| 43 | 190 | 143 | 75.26 | — | — | — | 4¾ |
| 44 | 195 | 139 | 71.28 | — | — | — | 6 |
| 45 | 199 | 157 | 78.89 | — | — | — | 6 |
| 46 | 189 | 138 | 73.02 | — | — | — | 5¼ |
| 47 | 195 | 140 | 71.79 | — | — | — | 9 |
| 48 | 182 | 138 | 75.82 | — | — | — | ½ |
| 49 | 194 | 142 | 73.20 | — | — | — | 5½ |

DURUMA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 50 | 188 | 135 | 71.81 | — | — | — | 7½ |
| 51 | 196 | 141 | 71.94 | — | — | — | 7½ |
| 52 | 176 | 128 | 72.73 | — | — | — | 1½ |
| 53 | 190 | 142 | 74.74 | — | — | — | 2½ |
| 54 | 179 | 140 | 78.21 | — | — | — | 2½ |
| 55 | 190 | 143 | 75.26 | — | — | — | 4½ |
| 56 | 190 | 146 | 76.84 | — | — | — | 3½ |
| 57 | 196 | 147 | 75.00 | — | — | — | 8½ |
| 58 | 186 | 138 | 74.19 | — | — | — | 2½ |
| 59 | 189 | 139 | 73.54 | — | — | — | 6½ |
| 60 | 188 | 153 | 81.38 | — | — | — | 1½ |
| 61 | 195 | 140 | 71.79 | — | — | — | 4½ |
| 62 | 176 | 142 | 80.68 | — | — | — | 2½ |
| 63 | 194 | 144 | 74.23 | — | — | — | 6½ |
| 64 | 181 | 141 | 77.90 | — | — | — | ¾ |
| 65 | 185 | 143 | 77.30 | — | — | — | 5 |
| 66 | 188 | 142 | 75.53 | — | — | — | 4½ |
| 67 | 190 | 140 | 73.68 | 44 | 44 | 100.00 | 3½ |

GIRIANA.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 183 | 140 | 76.50 | — | — | — | 5½ |
| 2 | 184 | 140 | 76.09 | — | — | — | 4½ |
| 3 | 202 | 154 | 76.24 | — | — | — | 5½ |
| 4 | 192 | 147 | 76.56 | — | — | — | 8 |
| 5 | 185 | 145 | 78.38 | — | — | — | 2½ |
| 6 | 183 | 139 | 75.96 | — | — | — | 6½ |
| 7 | 183 | 136 | 74.32 | — | — | — | 5 |
| 8 | 189 | 138 | 73.62 | — | — | — | 3 |
| 9 | 182 | 145 | 79.67 | — | — | — | 3½ |
| 10 | 179 | 138 | 77.09 | — | — | — | 5½ |
| 11 | 186 | 142 | 76.34 | — | — | — | 8½ |
| 12 | 190 | 139 | 73.16 | — | — | — | 4 |
| 13 | 195 | 146 | 74.87 | — | — | — | 5½ |
| 14 | 182 | 137 | 75.27 | — | — | — | 5½ |
| 15 | 187 | 142 | 75.94 | — | — | — | ½ |
| 16 | 191 | 144 | 75.39 | — | — | — | ¾ |

GIRIAMA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 17 | 178 | 147 | 82.58 | — | — | — | 1½ |
| 18 | 190 | 150 | 78.95 | — | — | — | 4 |
| 19 | 190 | 141 | 74.21 | — | — | — | 4 |
| 20 | 190 | 149 | 78.42 | — | — | — | 0 |
| 21 | 177 | 141 | 79.66 | — | — | — | ½ |
| 22 | 190 | 148 | 77.89 | — | — | — | 4½ |
| 23 | 197 | 147 | 74.62 | — | — | — | 3½ |
| 24 | 186 | 142 | 76.34 | 48 | 46 | 95.83 | 7½ |

NYIKA.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 191 | 144 | 75.39 | — | — | — | 4½ |
| 2 | 193 | 150 | 77.72 | — | — | — | 7½ |
| 3 | 183 | 146 | 79.78 | — | — | — | 6 |
| 4 | 190 | 146 | 76.84 | — | — | — | 5 |
| 5 | 185 | 147 | 79.46 | — | — | — | 2½ |
| 6 | 190 | 146 | 76.84 | — | — | — | 4 |
| 7 | 192 | 150 | 78.13 | — | — | — | 5½ |
| 8 | 178 | 147 | 82.58 | — | — | — | 3 |
| 9 | 193 | 145 | 75.13 | — | — | — | 4½ |
| 10 | 198 | 146 | 73.74 | — | — | — | 7½ |
| 11 | 186 | 149 | 80.11 | — | — | — | 5½ |
| 12 | 181 | 143 | 79.01 | — | — | — | 4½ |
| 13 | 195 | 144 | 73.85 | — | — | — | 4½ |
| 14 | 187 | 144 | 77.01 | — | — | — | 3½ |
| 15 | 175 | 145 | 82.86 | — | — | — | 7½ |
| 16 | 189 | 149 | 78.84 | — | — | — | 7½ |
| 17 | 189 | 145 | 76.72 | — | — | — | 4½ |
| 18 | 190 | 141 | 74.21 | — | — | — | 7½ |

CHAGA.

| | | | | | | | |
|---|-----|-----|-------|---|---|---|---|
| 1 | 198 | 145 | 73.23 | — | — | — | 5 |
| 2 | 181 | 151 | 83.43 | — | — | — | 2 |
| 3 | 191 | 148 | 77.49 | — | — | — | 3 |
| 4 | 185 | 144 | 77.84 | — | — | — | 7 |

CHAGA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 5 | 182 | 142 | 78.02 | — | — | — | 3 |
| 6 | 179 | 142 | 79.33 | — | — | — | 0 |
| 7 | 194 | 138 | 71.13 | — | — | — | 3½ |
| 8 | 188 | 140 | 74.47 | — | — | — | 11½ |
| 9 | 189 | 144 | 76.19 | — | — | — | 4½ |
| 10 | 179 | 141 | 78.77 | — | — | — | 1½ |
| 11 | 185 | 142 | 76.76 | — | — | — | 9½ |
| 12 | 191 | 138 | 72.25 | — | — | — | 3½ |
| 13 | 191 | 135 | 70.68 | — | — | — | 4 |
| 14 | 193 | 142 | 73.96 | — | — | — | 4½ |
| 15 | 184 | 140 | 76.09 | — | — | — | 7½ |
| 16 | 189 | 143 | 75.66 | — | — | — | 6 |
| 17 | 185 | 135 | 72.97 | 45 | 39 | 86.67 | 0 |
| 18 | 189 | 150 | 79.37 | 46 | 38 | 82.61 | 6½ |

AKIKUYU.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 190 | 149 | 78.42 | — | — | — | 5½ |
| 2 | 183 | 138 | 75.41 | — | — | — | 12½ |
| 3 | 184 | 151 | 82.07 | — | — | — | 5½ |
| 4 | 185 | 151 | 81.62 | — | — | — | 1½ |
| 5 | 196 | 146 | 74.49 | — | — | — | 6½ |
| 6 | 194 | 152 | 78.35 | — | — | — | 5½ |
| 7 | 177 | 139 | 78.53 | — | — | — | 6½ |
| 8 | 183 | 160 | 87.43 | — | — | — | 3½ |
| 9 | 197 | 149 | 75.63 | — | — | — | 2½ |
| 10 | 190 | 154 | 81.05 | — | — | — | 10½ |
| 11 | 191 | 145 | 75.92 | — | — | — | 4½ |
| 12 | 190 | 145 | 76.32 | — | — | — | 2 |
| 13 | 192 | 146 | 76.04 | — | — | — | 4½ |
| 14 | 200 | 148 | 74.00 | — | — | — | 4½ |
| 15 | 201 | 158 | 78.61 | — | — | — | 6½ |
| 16 | 185 | 134 | 72.43 | — | — | — | 5½ |
| 17 | 180 | 152 | 84.44 | — | — | — | 3½ |
| 18 | 195 | 150 | 76.92 | — | — | — | 7 |
| 19 | 205 | 149 | 72.68 | — | — | — | 6 |
| 20 | 192 | 148 | 77.08 | — | — | — | 5 |

AKIKUYU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 21 | 189 | 141 | 71.60 | — | — | — | 4½ |
| 22 | 184 | 146 | 79.35 | — | — | — | 1½ |
| 23 | 194 | 150 | 77.32 | — | — | — | 4½ |
| 24 | 187 | 146 | 78.07 | — | — | — | 4 |
| 25 | 184 | 144 | 78.26 | — | — | — | 6½ |
| 26 | 187 | 140 | 74.87 | — | — | — | 9 |
| 27 | 179 | 140 | 78.21 | — | — | — | 1¼ |
| 28 | 193 | 148 | 76.68 | — | — | — | 6½ |
| 29 | 189 | 145 | 76.72 | — | — | — | 2½ |
| 30 | 194 | 154 | 79.38 | — | — | — | 5½ |
| 31 | 190 | 150 | 78.95 | — | — | — | 4½ |
| 32 | 192 | 148 | 77.08 | — | — | — | 4¼ |
| 33 | 193 | 144 | 74.61 | — | — | — | 4½ |
| 34 | 191 | 145 | 75.92 | — | — | — | 6½ |
| 35 | 191 | 142 | 74.35 | — | — | — | 7½ |
| 36 | 196 | 146 | 74.49 | — | — | — | 6½ |
| 37 | 183 | 139 | 75.96 | — | — | — | 6 |
| 38 | 186 | 144 | 77.72 | — | — | — | 4½ |
| 39 | 192 | 146 | 76.04 | — | — | — | 5 |
| 40 | 198 | 144 | 72.73 | — | — | — | 7¼ |
| 41 | 200 | 143 | 71.50 | — | — | — | 6½ |
| 42 | 186 | 146 | 78.49 | — | — | — | 4¼ |
| 43 | 191 | 149 | 78.01 | — | — | — | 1¼ |
| 44 | 186 | 137 | 73.66 | — | — | — | 4½ |
| 45 | 187 | 143 | 76.47 | — | — | — | 3 |
| 46 | 184 | 148 | 80.43 | — | — | — | 6 |
| 47 | 192 | 154 | 80.21 | — | — | — | 5½ |
| 48 | 192 | 140 | 72.92 | — | — | — | 6¼ |
| 49 | 179 | 139 | 77.65 | — | — | — | 6¼ |
| 50 | 177 | 138 | 77.97 | — | — | — | 6¼ |
| 51 | 186 | 143 | 76.88 | — | — | — | 2½ |
| 52 | 180 | 140 | 77.78 | — | — | — | 1½ |
| 53 | 177 | 139 | 78.53 | — | — | — | 3½ |
| 54 | 180 | 141 | 78.33 | — | — | — | 9½ |
| 55 | 188 | 140 | 74.47 | — | — | — | 8½ |
| 56 | 184 | 140 | 76.09 | — | — | — | 1¼ |
| 57 | 192 | 144 | 75.00 | — | — | — | 6½ |
| 58 | 182 | 144 | 79.12 | — | — | — | 7½ |
| 59 | 196 | 152 | 77.55 | — | — | — | 10 |

AKIKUYU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 60 | 178 | 138 | 77.53 | — | — | — | 6½ |
| 61 | 196 | 147 | 75.00 | — | — | — | 7½ |
| 62 | 180 | 145 | 80.56 | — | — | — | 5 |
| 63 | 183 | 144 | 78.69 | — | — | — | 3½ |
| 64 | 183 | 146 | 79.78 | — | — | — | 7½ |
| 65 | 191 | 148 | 77.49 | — | — | — | 4½ |
| 66 | 193 | 138 | 71.50 | — | — | — | 4½ |
| 67 | 181 | 139 | 78.80 | — | — | — | 6¾ |
| 68 | 176 | 136 | 77.27 | — | — | — | -1½ |
| 69 | 198 | 143 | 72.22 | — | — | — | 8½ |
| 70 | 186 | 136 | 73.12 | — | — | — | 4¾ |
| 71 | 201 | 146 | 72.64 | — | — | — | 2½ |
| 72 | 192 | 146 | 76.04 | — | — | — | 3½ |
| 73 | 195 | 146 | 74.87 | — | — | — | 6¾ |
| 74 | 194 | 153 | 78.87 | — | — | — | 8½ |
| 75 | 183 | 145 | 79.23 | — | — | — | 3¾ |
| 76 | 192 | 158 | 82.29 | — | — | — | 7¾ |
| 77 | 198 | 141 | 71.21 | — | — | — | 5¾ |
| 78 | 193 | 150 | 77.72 | — | — | — | 3 |
| 79 | 194 | 142 | 78.20 | — | — | — | 4 |
| 80 | 190 | 146 | 76.84 | — | — | — | 1½ |
| 81 | 183 | 141 | 77.05 | — | — | — | ¾ |
| 82 | 180 | 139 | 77.22 | — | — | — | 6¾ |
| 83 | 191 | 145 | 75.92 | — | — | — | 5½ |
| 84 | 187 | 139 | 74.33 | — | — | — | 5 |
| 85 | 186 | 141 | 75.81 | — | — | — | 6½ |
| 86 | 191 | 145 | 74.74 | — | — | — | 8¾ |
| 87 | 184 | 138 | 75.00 | — | — | — | 4 |
| 88 | 184 | 136 | 73.91 | — | — | — | 5 |
| 89 | 190 | 146 | 75.79 | — | — | — | 8¾ |
| 90 | 188 | 144 | 76.60 | — | — | — | 4¾ |
| 91 | 193 | 137 | 70.98 | — | — | — | 6 |
| 92 | 194 | 141 | 72.68 | — | — | — | 10 |
| 93 | 194 | 142 | 73.20 | — | — | — | 4¾ |
| 94 | 185 | 143 | 77.30 | — | — | — | 5½ |
| 95 | 179 | 144 | 80.45 | — | — | — | 4 |
| 96 | 189 | 143 | 75.60 | — | — | — | 5½ |
| 97 | 188 | 133 | 70.74 | — | — | — | 3¾ |
| 98 | 190 | 134 | 67.34 | — | — | — | 4½ |

AKIKUYU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 99 | 193 | 147 | 76.17 | — | — | — | 4½ |
| 100 | 175 | 142 | 81.14 | — | — | — | 5 |
| 101 | 196 | 144 | 73.47 | — | — | — | 3½ |
| 102 | 191 | 138 | 72.25 | — | — | — | 1½ |
| 103 | 193 | 138 | 71.50 | — | — | — | 4½ |
| 104 | 187 | 146 | 78.07 | — | — | — | 9½ |
| 105 | 192 | 147 | 76.56 | — | — | — | 4½ |
| 106 | 182 | 140 | 76.92 | — | — | — | 3½ |
| 107 | 184 | 145 | 78.80 | — | — | — | 1½ |
| 108 | 181 | 148 | 81.77 | — | — | — | 2½ |
| 109 | 191 | 145 | 75.92 | — | — | — | 2½ |
| 110 | 180 | 136 | 75.56 | — | — | — | 6 |
| 111 | 186 | 145 | 78.38 | 53 | 39 | 73.58 | 3½ |
| 112 | 183 | 144 | 78.69 | 46 | 41 | 89.13 | 4 |
| 113 | 193 | 145 | 75.13 | 43 | 43 | 100.00 | 1½ |
| 114 | 186 | 142 | 76.34 | 41 | 40 | 97.56 | 2½ |
| 115 | 189 | 148 | 78.31 | 51 | 42 | 82.35 | 8½ |
| 116 | 188 | 140 | 74.47 | 41 | 39 | 95.12 | 1½ |
| 117 | 185 | 154 | 83.24 | 48 | 50 | 104.17 | 1½ |
| 118 | 188 | 145 | 77.13 | 49 | 38 | 77.55 | 1½ |
| 119 | 188 | 143 | 76.06 | 47 | 38 | 80.85 | 6 |
| 120 | 193 | 145 | 75.13 | 44 | 41 | 93.18 | 2½ |
| 121 | 190 | 139 | 73.16 | 52 | 38 | 73.08 | 4½ |
| 122 | 193 | 144 | 74.61 | 47 | 39 | 82.98 | 3½ |
| 123 | 187 | 138 | 73.80 | 46 | 34 | 73.91 | —½ |
| 124 | 181 | 142 | 78.45 | 41 | 38 | 92.68 | 7 |
| 125 | 193 | 141 | 73.06 | 43 | 41 | 95.35 | 2½ |
| 126 | 184 | 147 | 79.89 | 46 | 43 | 93.48 | 4½ |
| 127 | 188 | 155 | 82.45 | 48 | 36 | 75.00 | 2½ |
| 128 | 191 | 146 | 76.44 | 39 | 37 | 94.87 | 4½ |
| 129 | 178 | 133 | 74.72 | 38 | 38 | 100.00 | 3½ |
| 130 | 187 | 142 | 75.94 | 44 | 35 | 79.55 | 1½ |
| 131 | 194 | 142 | 73.20 | 45 | 34 | 75.56 | 6 |
| 132 | 183 | 149 | 81.42 | 40 | 37 | 92.50 | —½ |
| 133 | 200 | 146 | 73.00 | 44 | 36 | 81.82 | 4½ |
| 134 | 185 | 143 | 77.30 | 42 | 43 | 102.38 | 1½ |
| 135 | 191 | 147 | 76.96 | 44 | 39 | 88.64 | 2½ |
| 136 | 196 | 152 | 77.55 | 50 | 42 | 84.00 | 3½ |
| 137 | 192 | 143 | 74.48 | 43 | 38 | 88.37 | 2½ |

AKIKUYU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 138 | 184 | 143 | 69·15 | 37 | 37 | 100·00 | 3½ |
| 139 | 197 | 149 | 75·63 | 45 | 35 | 77·78 | 7½ |
| 140 | 187 | 144 | 77·01 | 44 | 42 | 95·45 | 1½ |
| 141 | 188 | 140 | 74·47 | 43 | 39 | 90·70 | 3½ |
| 142 | 197 | 138 | 70·05 | 47 | 38 | 80·85 | 4½ |
| 143 | 190 | 152 | 80·00 | 42 | 38 | 90·48 | 2½ |
| 144 | 201 | 144 | 71·64 | 45 | 37 | 82·22 | 0 |
| 145 | 183 | 143 | 78·14 | 38 | 36 | 94·74 | 2 |
| 146 | 187 | 152 | 81·28 | 44 | 38 | 86·36 | 3½ |
| 147 | 188 | 142 | 75·53 | 47 | 39 | 82·98 | 6 |
| 148 | 186 | 145 | 77·96 | 49 | 42 | 85·71 | 3½ |
| 149 | 187 | 146 | 78·07 | 45 | 38 | 84·44 | 4 |
| 150 | 186 | 137 | 73·66 | 45 | 35 | 77·78 | 4½ |
| 151 | 187 | 146 | 78·07 | 51 | 42 | 82·35 | 1½ |
| 152 | 172 | 138 | 80·23 | 50 | 39 | 78·00 | ¾ |
| 153 | 183 | 146 | 79·78 | 39 | 40 | 102·56 | 1½ |
| 154 | 193 | 144 | 74·61 | 44 | 42 | 95·45 | 3½ |
| 155 | 188 | 144 | 76·60 | 48 | 34 | 70·83 | 3½ |
| 156 | 178 | 142 | 79·78 | 45 | 43 | 95·56 | 1½ |
| 157 | 179 | 145 | 81·01 | 46 | 38 | 82·61 | 5½ |
| 158 | 187 | 146 | 78·07 | 44 | 39 | 88·64 | 2½ |
| 159 | 185 | 137 | 74·05 | 42 | 41 | 97·62 | 2 |
| 160 | 197 | 143 | 72·59 | 50 | 39 | 78·00 | 1½ |
| 161 | 177 | 147 | 83·05 | 45 | 38 | 84·44 | 4 |
| 162 | 197 | 152 | 77·16 | 52 | 42 | 80·77 | 4 |
| 163 | 186 | 145 | 77·96 | 47 | 39 | 82·98 | 3½ |
| 164 | 195 | 150 | 76·92 | 49 | 44 | 89·80 | ½ |
| 165 | 192 | 135 | 70·31 | 45 | 40 | 88·89 | 2 |
| 166 | 190 | 144 | 75·79 | 45 | 38 | 84·44 | 3½ |
| 167 | 204 | 158 | 77·45 | 51 | 42 | 82·35 | 2 |
| 168 | 187 | 140 | 74·87 | 43 | 39 | 90·70 | 2½ |
| 169 | 184 | 142 | 79·35 | 42 | 36 | 85·71 | 5½ |
| 170 | 181 | 145 | 80·11 | 47 | 37 | 78·72 | 2½ |
| 171 | 189 | 144 | 76·19 | 46 | 38 | 82·61 | 3½ |
| 172 | 195 | 146 | 74·87 | 48 | 39 | 81·25 | 3 |
| 173 | 188 | 146 | 77·66 | 40 | 38 | 95·00 | 4 |
| 174 | 191 | 138 | 72·55 | 41 | 36 | 87·80 | 5½ |
| 175 | 195 | 141 | 72·31 | 49 | 36 | 73·47 | 4 |
| 176 | 183 | 148 | 80·87 | 45 | 38 | 84·44 | -½ |

AKIKUYU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 177 | 185 | 149 | 80.54 | 44 | 40 | 90.91 | 5½ |
| 178 | 189 | 151 | 79.89 | 43 | 38 | 88.37 | 3½ |
| 179 | 186 | 143 | 76.88 | 51 | 41 | 80.39 | -¾ |
| 180 | 190 | 141 | 74.21 | 45 | 40 | 88.89 | 6½ |
| 181 | 190 | 144 | 75.79 | 45 | 41 | 91.11 | 3½ |
| 182 | 180 | 139 | 77.22 | 50 | 39 | 78.00 | 2 |
| 183 | 195 | 142 | 72.82 | 45 | 40 | 88.89 | 3 |
| 184 | 189 | 149 | 78.84 | 43 | 39 | 90.70 | 6¼ |
| 185 | 189 | 141 | 74.60 | 43 | 43 | 100.00 | 5½ |
| 186 | 193 | 151 | 78.24 | 45 | 40 | 88.89 | 3 |
| 187 | 188 | 139 | 73.94 | 46 | 40 | 86.96 | 3½ |
| 188 | 176 | 139 | 78.98 | 44 | 37 | 84.09 | ½ |
| 189 | 182 | 141 | 77.47 | 48 | 37 | 77.08 | 1 |
| 190 | 184 | 160 | 86.96 | 43 | 39 | 90.70 | 6½ |
| 191 | 191 | 138 | 72.25 | 46 | 36 | 78.26 | 4 |
| 192 | 197 | 135 | 68.53 | 43 | 37 | 86.05 | 4 |
| 193 | 173 | 139 | 80.35 | 40 | 37 | 92.50 | 1½ |
| 194 | 189 | 142 | 75.13 | 46 | 40 | 86.96 | 1 |
| 195 | 194 | 144 | 74.23 | 47 | 32 | 68.09 | 5 |
| 196 | 192 | 141 | 73.44 | 48 | 38 | 79.17 | 2½ |
| 197 | 182 | 148 | 81.32 | 49 | 33 | 67.35 | 3½ |
| 198 | 183 | 138 | 75.41 | 43 | 37 | 86.05 | ¾ |
| 199 | 178 | 135 | 75.84 | 49 | 37 | 75.51 | 2½ |
| 200 | 180 | 141 | 78.33 | 46 | 35 | 76.09 | 2½ |
| 201 | 193 | 144 | 74.61 | 40 | 38 | 95.00 | 5½ |
| 202 | 202 | 141 | 69.80 | 43 | 40 | 93.02 | 5½ |
| 203 | 197 | 144 | 73.10 | 44 | 41 | 93.18 | 5½ |
| 204 | 182 | 131 | 71.98 | 45 | 35 | 77.78 | -2 |
| 205 | 187 | 143 | 76.47 | 45 | 46 | 102.22 | 5½ |
| 206 | 185 | 142 | 76.76 | 46 | 46 | 100.00 | 7 |
| 207 | 188 | 142 | 75.53 | 44 | 43 | 97.73 | ¾ |
| 208 | 190 | 144 | 75.79 | 44 | 41 | 93.18 | 4 |
| 209 | 186 | 140 | 75.27 | 40 | 42 | 105.00 | 2 |
| 210 | 196 | 146 | 74.49 | 40 | 36 | 90.00 | 2½ |
| 211 | 197 | 148 | 75.13 | 45 | 41 | 91.11 | ½ |
| 212 | 185 | 143 | 77.30 | 44 | 44 | 100.00 | 4½ |
| 213 | 189 | 141 | 75.60 | 44 | 41 | 93.18 | 7 |
| 214 | 191 | 140 | 73.30 | 45 | 38 | 84.44 | 4 |
| 215 | 195 | 140 | 71.79 | 47 | 42 | 89.36 | 3½ |

AKIKUYU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 216 | 185 | 137 | 74.05 | 43 | 40 | 93.02 | 8 |
| 217 | 186 | 143 | 77.96 | 42 | 40 | 95.24 | 3½ |
| 218 | 180 | 138 | 76.67 | 42 | 43 | 102.38 | -½ |
| 219 | 194 | 144 | 74.23 | 41 | 38 | 92.68 | 4 |
| 220 | 201 | 142 | 70.65 | 46 | 42 | 91.30 | 5½ |
| 221 | 190 | 141 | 74.21 | 42 | 41 | 97.62 | 3½ |
| 222 | 198 | 150 | 75.76 | 45 | 45 | 100.00 | 7½ |
| 223 | 193 | 147 | 76.17 | 47 | 42 | 89.36 | 3½ |
| 224 | 193 | 149 | 77.20 | 43 | 41 | 95.35 | 3½ |
| 225 | 189 | 138 | 73.02 | 47 | 41 | 87.23 | 3 |
| 226 | 187 | 147 | 78.61 | 47 | 37 | 78.72 | 5½ |
| 227 | 184 | 139 | 75.54 | 44 | 40 | 90.91 | 2½ |
| 228 | 190 | 142 | 74.74 | 45 | 41 | 91.11 | 6 |
| 229 | 182 | 140 | 76.92 | 47 | 38 | 80.85 | 1½ |
| 230 | 184 | 134 | 72.83 | 44 | 37 | 84.09 | 2½ |
| 231 | 183 | 144 | 78.69 | 43 | 43 | 100.00 | 3½ |
| 232 | 183 | 138 | 75.41 | 48 | 40 | 83.33 | 5 |
| 233 | 190 | 139 | 73.16 | 45 | 36 | 80.00 | 2½ |
| 234 | 186 | 135 | 72.58 | 45 | 41 | 91.11 | 5½ |
| 235 | 184 | 137 | 74.46 | 39 | 39 | 100.00 | 5 |
| 236 | 192 | 143 | 74.48 | 48 | 41 | 85.42 | 4 |
| 237 | 190 | 144 | 75.79 | 48 | 39 | 81.25 | 3½ |
| 238 | 193 | 144 | 74.61 | 51 | 42 | 82.35 | 4½ |
| 239 | 193 | 142 | 73.58 | 50 | 39 | 78.00 | 6 |
| 240 | 193 | 147 | 76.17 | 46 | 41 | 89.13 | 4½ |
| 241 | 193 | 147 | 76.17 | 44 | 38 | 86.36 | 6½ |
| 242 | 203 | 147 | 72.41 | 49 | 39 | 79.59 | 7 |
| 243 | 187 | 146 | 78.61 | 44 | 43 | 97.73 | 8 |
| 244 | 185 | 140 | 75.68 | 45 | 43 | 95.56 | 4 |
| 245 | 192 | 143 | 74.48 | 49 | 40 | 81.63 | 8 |
| 246 | 184 | 137 | 74.46 | 46 | 38 | 82.61 | 4 |
| 247 | 190 | 141 | 74.21 | 41 | 40 | 97.56 | 5 |
| 248 | 193 | 145 | 75.13 | 48 | 40 | 83.83 | 7½ |
| 249 | 185 | 144 | 77.84 | 42 | 37 | 88.10 | 6½ |
| 250 | 193 | 151 | 78.24 | 47 | 39 | 82.98 | 9 |
| 251 | 187 | 146 | 78.07 | 46 | 39 | 84.78 | 4 |
| 252 | 188 | 140 | 74.47 | 45 | 42 | 93.33 | 9 |
| 253 | 204 | 138 | 67.65 | 47 | 36 | 76.60 | 6 |
| 254 | 195 | 147 | 75.38 | 51 | 35 | 68.63 | 8½ |

AKIKUYU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 255 | 192 | 139 | 73.16 | 44 | 40 | 90.91 | 9½ |
| 256 | 188 | 141 | 75.00 | 45 | 45 | 100.00 | 6 |
| 257 | 184 | 139 | 75.54 | 46 | 39 | 84.78 | 1½ |
| 258 | 182 | 148 | 81.32 | 49 | 38 | 77.55 | 3 |
| 259 | 179 | 139 | 77.65 | 45 | 38 | 84.44 | ½ |
| 260 | 188 | 140 | 74.47 | 42 | 41 | 97.62 | 4 |
| 261 | 184 | 143 | 77.72 | 47 | 38 | 80.85 | 3½ |
| 262 | 197 | 151 | 76.65 | 51 | 40 | 78.43 | 9 |
| 263 | 195 | 147 | 75.38 | 46 | 40 | 86.96 | 2 |
| 264 | 192 | 141 | 73.44 | 47 | 40 | 85.11 | 2 |
| 265 | 184 | 137 | 74.46 | 44 | 35 | 79.55 | 5 |
| 266 | 196 | 146 | 74.49 | 42 | 38 | 90.48 | 5 |
| 267 | 183 | 140 | 76.50 | 45 | 36 | 80.00 | 5½ |
| 268 | 197 | 145 | 73.60 | 48 | 37 | 77.08 | 7½ |
| 269 | 188 | 149 | 79.26 | 41 | 44 | 107.32 | 7 |
| 270 | 181 | 144 | 79.56 | 46 | 40 | 86.96 | 3 |
| 271 | 186 | 149 | 80.11 | 49 | 41 | 83.67 | 5½ |
| 272 | 194 | 142 | 73.20 | 48 | 46 | 95.83 | 6½ |
| 273 | 187 | 139 | 74.33 | 47 | 43 | 91.49 | 7 |
| 274 | 183 | 148 | 80.87 | 58 | 40 | 68.97 | 5 |
| 275 | 185 | 137 | 74.05 | 44 | 45 | 102.27 | 9 |
| 276 | 189 | 157 | 83.07 | 45 | 46 | 102.22 | 5 |
| 277 | 194 | 148 | 76.29 | 47 | 44 | 93.62 | 3 |
| 278 | 181 | 143 | 79.01 | 50 | 44 | 88.00 | 2½ |
| 279 | 190 | 139 | 73.16 | 52 | 39 | 75.00 | 2½ |
| 280 | 192 | 144 | 75.00 | 49 | 41 | 83.67 | 2½ |
| 281 | 188 | 143 | 76.06 | 44 | 43 | 97.73 | 3½ |
| 282 | 182 | 137 | 75.27 | 46 | 38 | 82.61 | 2½ |
| 283 | 193 | 145 | 75.13 | 45 | 38 | 84.44 | 1½ |
| 284 | 175 | 134 | 76.57 | 44 | 38 | 86.36 | 6 |
| 285 | 182 | 139 | 76.37 | 48 | 41 | 85.42 | 5½ |
| 286 | 191 | 142 | 74.35 | 42 | 44 | 104.76 | 9½ |
| 287 | 188 | 137 | 72.87 | 46 | 39 | 84.78 | 7 |
| 288 | 182 | 144 | 79.12 | 49 | 41 | 83.67 | 5½ |
| 289 | 192 | 149 | 77.60 | 48 | 44 | 91.67 | 4½ |
| 290 | 186 | 135 | 72.58 | 42 | 38 | 90.48 | 3½ |
| 291 | 191 | 140 | 73.30 | 50 | 48 | 96.00 | 8½ |
| 292 | 183 | 143 | 78.14 | 48 | 39 | 81.25 | 4 |
| 293 | 190 | 143 | 75.26 | 48 | 41 | 85.42 | 3½ |

AKIKUYU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 294 | 195 | 145 | 74.36 | 47 | 40 | 85.11 | 6½ |
| 295 | 194 | 145 | 74.74 | 46 | 44 | 95.65 | 3 |
| 296 | 183 | 138 | 75.41 | 41 | 41 | 100.00 | 4½ |
| 297 | 190 | 147 | 77.37 | 50 | 42 | 84.00 | 6 |
| 298 | 202 | 141 | 69.80 | 44 | 41 | 93.18 | 10 |
| 299 | 193 | 147 | 76.17 | 44 | 40 | 90.91 | 10 |
| 300 | 197 | 148 | 75.13 | 49 | 41 | 83.67 | 8½ |
| 301 | 202 | 148 | 73.27 | 52 | 41 | 78.85 | 7 |
| 302 | 189 | 143 | 75.66 | 47 | 40 | 85.11 | 4½ |
| 303 | 183 | 145 | 79.23 | 49 | 38 | 77.55 | 2 |
| 304 | 192 | 151 | 78.65 | 53 | 41 | 77.36 | 11 |
| 305 | 193 | 140 | 72.54 | 50 | 39 | 78.00 | 5 |
| 306 | 196 | 146 | 74.49 | 45 | 40 | 88.89 | 7 |
| 307 | 188 | 132 | 70.21 | 44 | 38 | 86.56 | ½ |
| 308 | 201 | 139 | 69.15 | 45 | 39 | 86.67 | 8 |
| 309 | 184 | 137 | 74.46 | 45 | 37 | 82.22 | 2½ |
| 310 | 185 | 146 | 78.92 | 50 | 39 | 78.00 | 2 |
| 311 | 193 | 150 | 77.72 | 48 | 42 | 87.50 | 9½ |
| 312 | 189 | 142 | 75.13 | 50 | 41 | 82.00 | 4½ |
| 313 | 188 | 137 | 72.87 | 46 | 41 | 89.13 | 3 |
| 314 | 180 | 142 | 78.89 | 53 | 44 | 83.02 | 2 |
| 315 | 179 | 138 | 77.09 | 49 | 39 | 79.59 | 3 |
| 316 | 197 | 147 | 74.62 | 48 | 42 | 87.50 | 9 |
| 317 | 193 | 143 | 74.09 | 42 | 41 | 97.62 | 4½ |
| 318 | 191 | 136 | 71.20 | 45 | 38 | 84.44 | 8 |
| 319 | 189 | 144 | 76.19 | 50 | 43 | 86.00 | 6½ |
| 320 | 182 | 149 | 81.87 | 50 | 43 | 86.00 | 4½ |
| 321 | 194 | 140 | 72.16 | 46 | 40 | 86.96 | 12 |
| 322 | 182 | 149 | 81.87 | 48 | 40 | 83.33 | 5 |
| 323 | 194 | 144 | 74.23 | 47 | 39 | 84.78 | 7 |
| 324 | 189 | 141 | 74.60 | 46 | 28 | 60.87 | 5½ |
| 325 | 190 | 138 | 72.63 | 50 | 41 | 82.00 | 6 |
| 326 | 181 | 136 | 75.14 | 42 | 38 | 90.48 | 2 |
| 327 | 177 | 142 | 80.33 | 44 | 43 | 97.73 | 4½ |
| 328 | 191 | 136 | 71.20 | 47 | 42 | 89.36 | 1½ |
| 329 | 193 | 150 | 77.72 | 46 | 46 | 100.00 | 5½ |
| 330 | 188 | 149 | 79.26 | 52 | 41 | 78.85 | 7 |
| 331 | 178 | 136 | 76.40 | 44 | 38 | 86.56 | 2½ |
| 332 | 187 | 140 | 74.81 | 51 | 45 | 88.24 | 4½ |

AKIKUYU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 333 | 187 | 146 | 78.07 | 48 | 41 | 85.42 | 8 |
| 334 | 191 | 147 | 76.96 | 46 | 40 | 86.96 | 5 |
| 335 | 184 | 144 | 78.26 | 50 | 43 | 86.00 | 7 |
| 336 | 187 | 138 | 73.80 | 49 | 44 | 89.80 | 8½ |
| 337 | 186 | 144 | 77.42 | 47 | 42 | 89.36 | 8 |
| 338 | 196 | 145 | 73.98 | 47 | 44 | 93.62 | 8 |
| 339 | 186 | 142 | 76.34 | 47 | 41 | 87.23 | 6½ |
| 340 | 196 | 143 | 72.96 | 47 | 42 | 89.36 | 5 |
| 341 | 188 | 143 | 76.06 | 45 | 45 | 100.00 | 3 |
| 342 | 202 | 146 | 72.28 | 50 | 40 | 80.00 | 8 |
| 343 | 183 | 137 | 75.86 | 52 | 38 | 73.08 | 7½ |
| 344 | 195 | 147 | 75.38 | 46 | 38 | 82.61 | 4 |
| 345 | 193 | 142 | 78.58 | 45 | 41 | 91.11 | 4 |
| 346 | 181 | 141 | 77.90 | 46 | 41 | 89.13 | 3 |
| 347 | 187 | 150 | 80.21 | 48 | 45 | 93.75 | 2 |
| 348 | 185 | 147 | 70.46 | 50 | 39 | 78.00 | 7 |
| 349 | 185 | 141 | 76.22 | 46 | 38 | 82.61 | 3½ |
| 350 | 186 | 146 | 78.49 | 49 | 42 | 85.71 | 5½ |
| 351 | 184 | 133 | 72.28 | 45 | 42 | 93.33 | 4 |
| 352 | 203 | 139 | 68.47 | 48 | 41 | 85.42 | 9 |
| 353 | 190 | 138 | 72.63 | 54 | 39 | 72.22 | 6 |
| 354 | 191 | 144 | 75.39 | 47 | 36 | 76.60 | 3 |
| 355 | 194 | 138 | 71.13 | 50 | 41 | 82.00 | 4 |
| 356 | 183 | 140 | 76.50 | 47 | 39 | 84.78 | 3½ |
| 357 | 186 | 139 | 74.73 | 42 | 41 | 97.62 | 6 |
| 358 | 190 | 147 | 77.37 | 42 | 42 | 100.00 | 6 |
| 359 | 192 | 154 | 80.73 | 49 | 43 | 87.76 | 4 |
| 360 | 200 | 152 | 76.00 | 48 | 42 | 87.50 | 11½ |
| 361 | 192 | 144 | 75.00 | 43 | 41 | 95.35 | 5 |
| 362 | 193 | 138 | 71.50 | 41 | 40 | 97.56 | 1½ |
| 363 | 184 | 146 | 79.35 | 42 | 39 | 92.86 | 1½ |
| 364 | 194 | 145 | 74.74 | 49 | 41 | 83.67 | 4 |
| 365 | 191 | 143 | 74.87 | 47 | 40 | 85.11 | 8½ |
| 366 | 197 | 143 | 72.59 | 52 | 38 | 73.08 | 6½ |
| 367 | 196 | 144 | 73.47 | 41 | 40 | 97.56 | 4 |
| 368 | 197 | 138 | 70.05 | 47 | 34 | 72.34 | 2 |
| 369 | 192 | 139 | 72.40 | 49 | 43 | 87.76 | 4½ |
| 370 | 189 | 143 | 75.66 | 45 | 49 | 108.89 | 7 |
| 371 | 182 | 148 | 81.32 | 46 | 36 | 78.26 | 4 |

AKIKUYU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 372 | 182 | 146 | 80.22 | 48 | 40 | 83.33 | 2½ |
| 373 | 183 | 139 | 75.96 | 48 | 40 | 83.33 | 6 |
| 374 | 187 | 140 | 74.87 | 46 | 41 | 89.13 | 7½ |
| 375 | 181 | 143 | 79.01 | 45 | 41 | 91.11 | 2 |
| 376 | 192 | 148 | 77.08 | 51 | 45 | 88.24 | 4½ |
| 377 | 199 | 145 | 72.86 | 46 | 39 | 84.78 | 5½ |
| 378 | 175 | 144 | 82.29 | 50 | 39 | 78.00 | 4½ |
| 379 | 189 | 139 | 73.54 | 46 | 39 | 84.78 | — |
| 380 | 193 | 154 | 79.79 | 44 | 42 | 95.45 | 6 |
| 381 | 179 | 134 | 74.86 | 47 | 35 | 74.47 | 2 |
| 382 | 179 | 136 | 75.98 | 48 | 41 | 85.42 | 5½ |
| 383 | 183 | 138 | 75.41 | 50 | 44 | 88.00 | 11 |
| 384 | 200 | 140 | 70.00 | 50 | 42 | 84.00 | 3½ |

AKAMBA.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|-----|
| 1 | 193 | 149 | 77.20 | 58 | 44 | 70.69 | 5½ |
| 2 | 186 | 142 | 76.34 | 42 | 37 | 88.10 | 3 |
| 3 | 184 | 145 | 78.80 | 48 | 39 | 81.25 | 5 |
| 4 | 190 | 146 | 76.84 | 48 | 41 | 85.42 | 10½ |
| 5 | 184 | 141 | 76.63 | 47 | 36 | 76.60 | 7 |
| 6 | 192 | 150 | 78.13 | 46 | 43 | 93.48 | 7½ |
| 7 | 185 | 143 | 77.30 | 40 | 37 | 92.50 | 4½ |
| 8 | 190 | 139 | 73.16 | 42 | 40 | 95.24 | 8½ |
| 9 | 196 | 147 | 75.00 | 41 | 36 | 87.80 | 3½ |
| 10 | 190 | 145 | 76.32 | 43 | 39 | 90.70 | 3½ |
| 11 | 182 | 137 | 75.37 | 51 | 36 | 70.59 | 6½ |
| 12 | 190 | 145 | 76.32 | 39 | 35 | 89.74 | 4 |
| 13 | 190 | 137 | 72.11 | 44 | 39 | 88.64 | 4½ |
| 14 | 176 | 143 | 81.25 | 43 | 36 | 83.72 | ½ |
| 15 | 183 | 142 | 77.60 | 43 | 40 | 93.02 | ½ |
| 16 | 192 | 139 | 72.40 | 46 | 36 | 78.26 | 4½ |
| 17 | 181 | 151 | 83.43 | 53 | 45 | 84.91 | 7 |
| 18 | 182 | 148 | 81.32 | 41 | 40 | 97.56 | ½ |
| 19 | 180 | 141 | 78.33 | 43 | 32 | 74.42 | 4½ |

AKAMBA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 20 | 188 | 142 | 75.53 | 45 | 40 | 88.89 | 4½ |
| 21 | 181 | 130 | 71.82 | 46 | 39 | 84.78 | 2½ |
| 22 | 184 | 143 | 77.72 | 40 | 39 | 97.50 | 3½ |
| 23 | 190 | 145 | 76.32 | 44 | 41 | 93.18 | 2½ |
| 24 | 191 | 144 | 75.39 | 44 | 41 | 93.18 | 2½ |
| 25 | 188 | 148 | 78.72 | 43 | 37 | 81.82 | 5½ |
| 26 | 193 | 152 | 78.76 | 45 | 39 | 86.67 | 3 |
| 27 | 187 | 144 | 77.01 | 47 | 33 | 70.21 | 4½ |
| 28 | 190 | 148 | 77.89 | 46 | 39 | 84.78 | 2¾ |
| 29 | 189 | 141 | 74.60 | 44 | 44 | 100.00 | 5½ |
| 30 | 187 | 136 | 72.73 | 49 | 39 | 79.50 | 6½ |
| 31 | 197 | 144 | 73.10 | 42 | 42 | 100.00 | 5½ |
| 32 | 186 | 137 | 73.66 | 46 | 41 | 89.13 | 2. |
| 33 | 187 | 145 | 77.54 | 49 | 39 | 79.59 | 8 |
| 34 | 198 | 153 | 77.27 | 49 | 44 | 89.80 | 5½ |
| 35 | 187 | 147 | 78.61 | 53 | 43 | 81.13 | 6½ |
| 36 | 181 | 147 | 81.22 | 46 | 39 | 84.78 | 3½ |
| 37 | 198 | 141 | 71.21 | 44 | 42 | 95.45 | 8¾ |
| 38 | 187 | 140 | 74.87 | 50 | 41 | 82.00 | 8½ |
| 39 | 192 | 143 | 74.48 | 46 | 38 | 82.61 | 8½ |
| 40 | 189 | 135 | 71.43 | 45 | 45 | 100.00 | 10 |
| 41 | 189 | 138 | 73.02 | 49 | 38 | 77.55 | 6 |
| 42 | 191 | 155 | 81.15 | 46 | 41 | 89.13 | 5 |
| 43 | 187 | 141 | 75.40 | 45 | 42 | 93.33 | 6½ |
| 44 | 195 | 147 | 75.38 | 45 | 39 | 86.67 | 7 |
| 45 | 189 | 145 | 76.72 | 43 | 42 | 95.45 | 3 |
| 46 | 198 | 153 | 77.27 | 48 | 40 | 83.33 | 7 |
| 47 | 190 | 147 | 77.37 | 49 | 45 | 91.84 | 7 |
| 48 | 194 | 146 | 75.26 | 44 | 39 | 88.64 | 7 |
| 49 | 182 | 140 | 76.92 | 46 | 42 | 91.30 | 11 |
| 50 | 184 | 139 | 75.54 | 48 | 39 | 81.25 | 6 |
| 51 | 184 | 149 | 80.98 | 45 | 40 | 88.89 | 4 |
| 52 | 186 | 148 | 79.57 | 45 | 37 | 82.22 | 6½ |
| 53 | 189 | 155 | 82.01 | 49 | 41 | 83.67 | 5½ |
| 54 | 186 | 147 | 79.03 | 53 | 38 | 71.70 | 7½ |
| 55 | 186 | 146 | 78.49 | 50 | 43 | 86.00 | 7½ |
| 56 | 192 | 146 | 76.04 | — | — | — | 6½ |
| 57 | 188 | 140 | 74.47 | — | — | — | 2½ |
| 58 | 187 | 148 | 79.14 | — | — | — | 6½ |

AKAMBA—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 59 | 187 | 141 | 75.40 | — | — | — | 3½ |
| 60 | 191 | 140 | 73.30 | — | — | — | 5½ |
| 61 | 188 | 146 | 77.66 | — | — | — | 3½ |
| 62 | 189 | 137 | 73.02 | — | — | — | 5 |
| 63 | 185 | 150 | 81.08 | — | — | — | 5 |
| 64 | 197 | 152 | 77.16 | — | — | — | 5 |
| 65 | 180 | 140 | 77.78 | — | — | — | 5½ |
| 66 | 183 | 140 | 76.50 | — | — | — | 5½ |
| 67 | 182 | 140 | 76.92 | — | — | — | 4½ |
| 68 | 191 | 143 | 74.87 | — | — | — | 5½ |
| 69 | 174 | 136 | 78.16 | — | — | — | 2 |
| 70 | 185 | 146 | 78.92 | — | — | — | 9½ |
| 71 | 189 | 138 | 73.02 | — | — | — | 2½ |
| 72 | 192 | 143 | 74.48 | — | — | — | 4 |
| 73 | 181 | 132 | 72.93 | — | — | — | 4½ |
| 74 | 192 | 148 | 77.08 | — | — | — | 5½ |
| 75 | 189 | 143 | 75.66 | — | — | — | 7½ |
| 76 | 193 | 139 | 72.02 | — | — | — | 3½ |
| 77 | 200 | 138 | 69.00 | — | — | — | 7½ |
| 78 | 186 | 146 | 78.49 | — | — | — | 4½ |
| 79 | 184 | 142 | 77.17 | — | — | — | 4½ |
| 80 | 192 | 146 | 76.04 | — | — | — | 5½ |
| 81 | 197 | 154 | 78.17 | — | — | — | 9½ |
| 82 | 183 | 141 | 76.63 | — | — | — | 7 |
| 83 | 191 | 142 | 74.35 | — | — | — | 6½ |
| 84 | 183 | 147 | 80.33 | — | — | — | 7 |
| 85 | 193 | 144 | 74.61 | — | — | — | ½ |
| 86 | 183 | 147 | 80.33 | — | — | — | 6½ |
| 87 | 184 | 148 | 80.43 | — | — | — | 4½ |
| 88 | 188 | 129 | 68.62 | — | — | — | 3½ |
| 89 | 184 | 146 | 79.35 | — | — | — | 3 |
| 90 | 190 | 146 | 76.84 | — | — | — | 3½ |
| 91 | 179 | 150 | 83.80 | — | — | — | 2 |
| 92 | 175 | 139 | 79.43 | — | — | — | 2½ |
| 93 | 192 | 140 | 72.92 | — | — | — | 5½ |
| 94 | 186 | 146 | 78.40 | — | — | — | 3 |
| 95 | 189 | 141 | 74.60 | — | — | — | 5 |
| 96 | 177 | 139 | 78.53 | — | — | — | 2½ |
| 97 | 192 | 143 | 74.48 | — | — | — | 3½ |

AKAMBA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 98 | 185 | 141 | 76.22 | — | — | — | 5½ |
| 99 | 186 | 142 | 76.34 | — | — | — | 9 |
| 100 | 181 | 138 | 76.24 | — | — | — | 2½ |
| 101 | 179 | 143 | 79.89 | — | — | — | 2½ |
| 102 | 187 | 142 | 75.94 | — | — | — | 2½ |
| 103 | 174 | 135 | 77.59 | — | — | — | 2½ |
| 104 | 195 | 141 | 72.31 | — | — | — | 6½ |
| 105 | 184 | 145 | 76.09 | — | — | — | 3 |
| 106 | 186 | 133 | 71.51 | — | — | — | 9 |
| 107 | 190 | 142 | 74.74 | — | — | — | 6½ |
| 108 | 197 | 154 | 78.17 | — | — | — | 6½ |
| 109 | 190 | 148 | 77.89 | — | — | — | 9½ |
| 110 | 185 | 148 | 80.00 | — | — | — | 7½ |
| 111 | 183 | 147 | 80.33 | — | — | — | 5½ |
| 112 | 184 | 140 | 76.09 | — | — | — | 4½ |
| 113 | 187 | 146 | 78.07 | — | — | — | 5½ |
| 114 | 192 | 144 | 75.00 | — | — | — | 6½ |
| 115 | 186 | 142 | 76.34 | — | — | — | 5½ |
| 116 | 190 | 137 | 72.11 | — | — | — | 6½ |
| 117 | 193 | 141 | 73.06 | — | — | — | 5½ |
| 118 | 195 | 153 | 78.46 | — | — | — | 5½ |
| 119 | 184 | 146 | 79.35 | — | — | — | 5 |
| 120 | 185 | 141 | 76.22 | — | — | — | 4½ |
| 121 | 188 | 146 | 77.66 | — | — | — | 5 |
| 122 | 186 | 138 | 74.19 | — | — | — | 6½ |
| 123 | 191 | 150 | 78.53 | — | — | — | 5½ |
| 124 | 190 | 146 | 76.84 | — | — | — | 3½ |
| 125 | 193 | 148 | 76.68 | — | — | — | 10½ |
| 126 | 196 | 143 | 72.96 | — | — | — | 6 |
| 127 | 191 | 147 | 76.96 | — | — | — | 4½ |
| 128 | 186 | 148 | 79.57 | — | — | — | 6½ |

EMBU.

| | | | | | | | |
|---|-----|-----|-------|----|----|-------|----|
| 1 | 187 | 147 | 78.61 | 48 | 44 | 91.67 | 7½ |
| 2 | 180 | 142 | 78.89 | 50 | 41 | 82.00 | 4 |
| 3 | 184 | 141 | 76.63 | 49 | 42 | 85.71 | 8 |
| 4 | 188 | 140 | 74.47 | 46 | 40 | 86.96 | 5 |

EMBU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----------------|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 5 | 191 | 153 | 80.10 | 43 | 44 | 102.33 | 4½ |
| 6 | 185 | 138 | 74.59 | 43 | 39 | 90.70 | 6½ |
| 7 | 197 | 142 | 72.08 | 47 | 41 | 87.23 | 6½ |
| 8 | 191 | 139 | 72.77 | 47 | 47 | 100.00 | 4 |
| 9 | 187 | 142 | 75.94 | 45 | 46 | 102.22 | 7 |
| 10 | 191 | 146 | 76.44 | 45 | 42 | 93.33 | 4½ |
| 11 | 184 | 143 | 77.72 | 48 | 45 | 93.75 | 8½ |
| 12 | 193 | 150 | 77.72 | 51 | 42 | 82.35 | 8 |
| 13 | 196 | 148 | 75.51 | 52 | 44 | 84.62 | 5½ |
| 14 | 181 | 137 | 75.69 | 47 | 41 | 87.23 | -1 |
| 15 | 192 | 143 | 74.48 | 44 | 40 | 90.91 | 6 |
| 16 | 192 | 148 | 77.08 | 45 | 42 | 93.33 | 5½ |
| 17 | 189 | 143 | 75.66 | 49 | 50 | 102.04 | 8 |
| 18 | 192 | 143 | 74.48 | 44 | 42 | 95.45 | 7½ |
| 19 | 188 | 147 | 78.19 | 45 | 45 | 100.00 | 5½ |
| 20 | 204 | 153 | 75.00 | 53 | 47 | 88.68 | 4 |
| 21 | 188 | 136 | 72.34 | 43 | 40 | 93.02 | 3 |
| 22 | 188 | 144 | 76.60 | 51 | 43 | 84.31 | 1½ |
| 23 | 195 | 143 | 73.33 | 45 | 46 | 102.22 | 6 |
| 24 | 181 | 143 | 79.01 | 48 | 39 | 81.25 | 5 |
| 25 | 194 | 147 | 75.77 | 47 | 41 | 87.23 | 3½ |
| 26 | 185 | 145 | 78.38 | 43 | 42 | 97.67 | 1½ |
| 27 | 193 | 147 | 76.68 | 50 | 38 | 76.00 | 8 |
| 28 | 194 | 140 | 72.16 | 47 | 42 | 89.36 | 4½ |
| 29 | 191 | 127 | 71.73 | 47 | 39 | 82.98 | 7 |
| 30 | 188 | 141 | 75.00 | 45 | 40 | 88.89 | 1 |
| 31 | 178 | 145 | 81.46 | 51 | 40 | 78.43 | 3 |
| 32 | 185 | 145 | 78.38 | 50 | 40 | 80.00 | 4½ |
| 33 | 188 | 142 | 75.53 | 41 | 40 | 97.56 | -1 |
| 34 | 185 | 140 | 75.68 | 43 | 37 | 86.05 | 4½ |
| 35 | 183 | 145 | 79.23 | 45 | 41 | 91.11 | 2½ |
| 36 | 188 | 141 | 75.00 | 44 | 38 | 86.36 | 3½ |
| 37 | 194 | 152 | 78.35 | 47 | 41 | 87.23 | 6 |
| 38 | 190 | 141 | 74.21 | 48 | 40 | 83.33 | 7½ |
| 39 | 194 | 143 | 73.71 | 49 | 43 | 87.76 | 5½ |
| 50 ¹ | 191 | 149 | 78.01 | 51 | 40 | 78.43 | -½ |
| 51 | 184 | 141 | 76.63 | 43 | 40 | 93.02 | 4½ |
| 52 | 178 | 130 | 73.03 | 40 | 39 | 97.50 | 7 |
| 53 | 184 | 150 | 81.52 | 46 | 41 | 89.13 | 3½ |

¹ In assigning serial numbers to the individuals measured, Nos. 40-49 were omitted by an error.

EMBU—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 54 | 180 | 135 | 75.00 | 48 | 41 | 85.42 | $\frac{1}{2}$ |
| 55 | 185 | 148 | 80.00 | 44 | 39 | 88.64 | 4 |
| 56 | 185 | 143 | 77.30 | 38 | 39 | 102.63 | $1\frac{1}{2}$ |
| 57 | 191 | 150 | 78.53 | 39 | 42 | 107.69 | 6 |
| 58 | 189 | 140 | 74.07 | 54 | 36 | 66.67 | 6 |
| 59 | 188 | 140 | 74.47 | 46 | 38 | 82.61 | 5 |
| 60 | 197 | 146 | 74.11 | 49 | 41 | 83.67 | 6 |
| 61 | 195 | 140 | 71.79 | 46 | 39 | 82.28 | 2 |
| 62 | 189 | 140 | 74.07 | 44 | 41 | 93.18 | 5 |
| 63 | 194 | 145 | 74.74 | 48 | 39 | 81.25 | $4\frac{1}{2}$ |
| 64 | 199 | 137 | 68.84 | 39 | 43 | 110.26 | $6\frac{1}{2}$ |
| 65 | 182 | 146 | 80.22 | 44 | 42 | 95.45 | $5\frac{1}{2}$ |
| 66 | 200 | 148 | 74.00 | 51 | 43 | 84.31 | 5 |
| 67 | 207 | 140 | 67.63 | 51 | 37 | 72.55 | 8 |
| 68 | 181 | 156 | 75.14 | 43 | 36 | 83.72 | 4 |
| 69 | 198 | 135 | 68.18 | 44 | 35 | 79.55 | $5\frac{1}{2}$ |
| 70 | 180 | 139 | 77.22 | 46 | 43 | 93.48 | $1\frac{1}{2}$ |
| 71 | 197 | 152 | 77.16 | 48 | 39 | 81.25 | 3 |
| 72 | 186 | 136 | 73.12 | 45 | 38 | 84.44 | $4\frac{1}{2}$ |
| 73 | 188 | 139 | 73.94 | 47 | 42 | 89.36 | 3 |
| 74 | 184 | 134 | 72.83 | 47 | 38 | 80.85 | 2 |
| 75 | 180 | 139 | 75.14 | 47 | 41 | 87.23 | 2 |
| 76 | 196 | 137 | 69.90 | 48 | 42 | 87.50 | $9\frac{1}{2}$ |
| 77 | 190 | 138 | 72.63 | 51 | 39 | 76.47 | $5\frac{1}{2}$ |
| 78 | 188 | 143 | 76.06 | 42 | 44 | 104.76 | $4\frac{1}{2}$ |
| 79 | 201 | 149 | 74.13 | 51 | 47 | 92.16 | 8 |
| 80 | 190 | 148 | 77.89 | 46 | 42 | 91.30 | 5 |
| 81 | 188 | 146 | 77.66 | 45 | 39 | 86.67 | 2 |
| 82 | 194 | 147 | 75.77 | 46 | 46 | 100.00 | $6\frac{1}{2}$ |
| 83 | 196 | 149 | 76.02 | 48 | 41 | 85.42 | $3\frac{1}{2}$ |
| 84 | 189 | 134 | 70.90 | 42 | 40 | 95.24 | 3 |
| 85 | 198 | 156 | 78.79 | 47 | 37 | 78.72 | $3\frac{1}{2}$ |
| 86 | 189 | 142 | 75.13 | 50 | 37 | 74.00 | $6\frac{1}{2}$ |
| 87 | 187 | 138 | 73.80 | 46 | 41 | 89.13 | $1\frac{1}{2}$ |
| 88 | 196 | 141 | 71.94 | 54 | 49 | 90.74 | $6\frac{1}{2}$ |
| 89 | 177 | 138 | 77.97 | 46 | 40 | 86.96 | 6 |
| 90 | 195 | 151 | 77.44 | 52 | 41 | 78.85 | $5\frac{1}{2}$ |
| 91 | 183 | 145 | 79.23 | 38 | 41 | 107.89 | 4 |
| 92 | 190 | 143 | 75.26 | 45 | 39 | 86.67 | $6\frac{1}{2}$ |

EMBU—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|-----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 93 | 178 | 135 | 75.84 | 52 | 43 | 82.69 | 6½ |
| 94 | 197 | 140 | 71.07 | 43 | 37 | 86.05 | 3 |
| 95 | 182 | 145 | 79.67 | 47 | 39 | 82.98 | 5 |
| 96 | 190 | 150 | 78.95 | 47 | 41 | 87.23 | 7½ |
| 97 | 182 | 145 | 79.67 | 43 | 43 | 100.00 | 4 |
| 98 | 192 | 145 | 75.52 | 45 | 40 | 88.89 | 6½ |
| 99 | 183 | 137 | 74.86 | 41 | 40 | 97.56 | 4½ |
| 100 | 184 | 144 | 78.26 | 47 | 36 | 76.60 | 9½ |
| 101 | 197 | 142 | 72.08 | 48 | 40 | 83.33 | 5½ |
| 102 | 211 | 144 | 68.25 | 45 | 43 | 95.56 | 7½ |
| 103 | 185 | 141 | 76.22 | 47 | 35 | 74.47 | 5½ |
| 104 | 187 | 145 | 77.54 | 44 | 37 | 84.09 | 2½ |
| 105 | 178 | 135 | 75.84 | 50 | 41 | 82.00 | 6 |
| 106 | 193 | 149 | 77.20 | 46 | 38 | 82.28 | 4½ |
| 107 | 183 | 134 | 73.22 | 48 | 37 | 77.08 | 4 |
| 108 | 184 | 147 | 78.89 | 45 | 43 | 95.56 | 6½ |
| 109 | 185 | 134 | 72.43 | 46 | 40 | 86.96 | 10 |
| 110 | 179 | 138 | 77.09 | 44 | 39 | 88.64 | 5½ |

MANYEMA.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|-----|
| 1 | 201 | 160 | 79.60 | — | — | — | 10½ |
| 2 | 200 | 158 | 79.00 | — | — | — | 10 |
| 3 | 193 | 149 | 77.20 | — | — | — | 8½ |
| 4 | 184 | 144 | 79.35 | — | — | — | 3½ |
| 5 | 181 | 145 | 80.11 | — | — | — | 4½ |
| 6 | 184 | 150 | 81.52 | — | — | — | 5½ |
| 7 | 182 | 146 | 80.22 | — | — | — | 2½ |
| 8 | 186 | 141 | 75.81 | — | — | — | 7 |
| 9 | 187 | 149 | 79.68 | — | — | — | 3½ |
| 10 | 185 | 148 | 80.00 | — | — | — | 6½ |
| 11 | 185 | 153 | 82.70 | — | — | — | 4½ |
| 12 | 193 | 152 | 78.76 | — | — | — | 6½ |
| 13 | 179 | 149 | 83.24 | — | — | — | 3 |
| 14 | 196 | 142 | 72.45 | — | — | — | 7½ |
| 15 | 186 | 143 | 75.88 | — | — | — | 4½ |
| 16 | 196 | 142 | 76.34 | — | — | — | 7½ |

MANYEMA—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 17 | 178 | 145 | 81.46 | — | — | — | 1½ |
| 18 | 193 | 149 | 77.20 | — | — | — | 5 |
| 19 | 201 | 148 | 78.63 | — | — | — | 7½ |
| 20 | 199 | 150 | 75.38 | — | — | — | 6 |
| 21 | 194 | 147 | 75.77 | — | — | — | 8½ |
| 22 | 181 | 143 | 79.01 | — | — | — | 0 |
| 23 | 183 | 152 | 83.06 | — | — | — | 8 |
| 24 | 188 | 144 | 76.60 | — | — | — | 0 |
| 25 | 183 | 142 | 77.60 | — | — | — | 6½ |
| 26 | 176 | 132 | 75.00 | — | — | — | 4½ |
| 27 | 189 | 144 | 76.19 | — | — | — | 5½ |
| 28 | 198 | 144 | 72.73 | — | — | — | 6 |
| 29 | 194 | 162 | 83.51 | — | — | — | 6 |
| 30 | 186 | 155 | 83.33 | — | — | — | 4½ |
| 31 | 189 | 150 | 79.37 | — | — | — | 11½ |
| 32 | 187 | 144 | 77.01 | — | — | — | 3 |
| 33 | 190 | 151 | 79.47 | — | — | — | 3 |
| 34 | 183 | 145 | 79.23 | — | — | — | 2½ |
| 35 | 190 | 155 | 81.58 | — | — | — | 5½ |
| 36 | 181 | 140 | 77.35 | — | — | — | 2 |
| 37 | 192 | 137 | 71.35 | 48 | 42 | 87.50 | 9½ |
| 38 | 191 | 143 | 74.87 | 58 | 44 | 75.87 | 5½ |
| 39 | 194 | 149 | 76.80 | 50 | 42 | 84.00 | 8½ |
| 40 | 193 | 157 | 81.35 | 48 | 52 | 108.33 | 4 |
| 41 | 203 | 152 | 74.88 | 44 | 44 | 100.00 | 7 |
| 42 | 178 | 142 | 79.78 | 42 | 42 | 100.00 | 5½ |

ARAB AND SWAHILI.

| | | | | | | | |
|---|-----|-----|-------|---|---|---|----|
| 1 | 181 | 144 | 79.56 | — | — | — | 5½ |
| 2 | 204 | 152 | 74.51 | — | — | — | 7½ |
| 3 | 199 | 153 | 80.53 | — | — | — | 5 |
| 4 | 193 | 151 | 78.24 | — | — | — | 1½ |
| 5 | 199 | 149 | 74.87 | — | — | — | 6½ |
| 6 | 189 | 159 | 84.13 | — | — | — | 2½ |
| 7 | 196 | 147 | 75.00 | — | — | — | 4½ |
| 8 | 200 | 154 | 77.00 | — | — | — | 4½ |

ARAB AND SWAHILI—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 9 | 191 | 141 | 73·82 | — | — | — | 5½ |
| 10 | 190 | 140 | 73·68 | — | — | — | 9½ |
| 11 | 184 | 152 | 82·61 | — | — | — | 3½ |
| 12 | 187 | 142 | 81·28 | — | — | — | 2½ |
| 13 | 196 | 150 | 76·53 | — | — | — | 3½ |
| 14 | 186 | 149 | 80·11 | — | — | — | 0 |
| 15 | 193 | 140 | 72·54 | — | — | — | 3½ |
| 16 | 198 | 149 | 75·25 | — | — | — | 7½ |
| 17 | 188 | 146 | 77·66 | — | — | — | 4½ |
| 18 | 194 | 150 | 77·32 | — | — | — | 6 |
| 19 | 192 | 146 | 76·04 | — | — | — | ½ |
| 20 | 174 | 151 | 86·78 | — | — | — | 2½ |
| 21 | 182 | 149 | 81·87 | — | — | — | 6½ |
| 22 | 202 | 145 | 71·78 | — | — | — | 5 |
| 23 | 196 | 149 | 76·02 | — | — | — | 6½ |
| 24 | 189 | 149 | 78·84 | — | — | — | 3½ |
| 25 | 184 | 141 | 76·63 | — | — | — | 3½ |
| 26 | 184 | 150 | 81·52 | — | — | — | 4 |
| 27 | 192 | 146 | 76·04 | — | — | — | 9½ |
| 28 | 190 | 146 | 76·84 | — | — | — | 8 |
| 29 | 186 | 147 | 79·03 | — | — | — | 3½ |
| 30 | 199 | 147 | 73·87 | — | — | — | 4 |
| 31 | 201 | 149 | 74·13 | — | — | — | 7½ |
| 32 | 198 | 143 | 72·22 | — | — | — | 4½ |

ARABS, MUSKAT.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 193 | 155 | 80·31 | — | — | — | 5½ |
| 2 | 196 | 147 | 75·00 | — | — | — | 5 |
| 3 | 195 | 145 | 74·36 | — | — | — | 2½ |
| 4 | 182 | 140 | 76·92 | — | — | — | 7 |
| 5 | 189 | 146 | 77·25 | — | — | — | 1½ |
| 6 | 184 | 138 | 75·00 | — | — | — | 4½ |
| 7 | 183 | 155 | 84·70 | — | — | — | 4½ |
| 8 | 191 | 148 | 77·49 | — | — | — | 4½ |
| 9 | 183 | 143 | 78·14 | — | — | — | 6½ |
| 10 | 197 | 151 | 76·65 | — | — | — | 4½ |

ARABS, MUSKAT—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 11 | 173 | 132 | 76.30 | — | — | — | 4 |
| 12 | 179 | 142 | 79.33 | — | — | — | 8½ |
| 13 | 183 | 135 | 73.77 | — | — | — | 4½ |
| 14 | 186 | 148 | 79.57 | — | — | — | 7½ |
| 15 | 182 | 139 | 76.37 | — | — | — | 7¼ |
| 16 | 176 | 144 | 81.82 | — | — | — | 3½ |
| 17 | 181 | 144 | 79.56 | — | — | — | 4¼ |
| 18 | 192 | 144 | 75.00 | — | — | — | 7¼ |
| 19 | 180 | 143 | 79.44 | — | — | — | 7½ |
| 20 | 189 | 143 | 75.66 | — | — | — | 3½ |
| 21 | 181 | 149 | 82.32 | — | — | — | 6½ |
| 22 | 186 | 139 | 74.73 | — | — | — | 3 |
| 23 | 167 | 154 | 92.22 | — | — | — | 2½ |
| 24 | 185 | 142 | 76.22 | — | — | — | 4¼ |
| 25 | 181 | 151 | 83.43 | — | — | — | 2½ |
| 26 | 179 | 144 | 80.45 | — | — | — | 5 |
| 27 | 195 | 145 | 74.36 | — | — | — | 1½ |
| 28 | 202 | 145 | 71.78 | — | — | — | 7 |
| 29 | 196 | 145 | 73.98 | — | — | — | 7¼ |
| 30 | 181 | 147 | 81.22 | 50 | 39 | 78.00 | 4 |
| 31 | 168 | 140 | 83.33 | 49 | 40 | 81.63 | 5 |

ARABS, YEMEN.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 1 | 188 | 158 | 84.04 | — | — | — | 5½ |
| 2 | 188 | 149 | 79.26 | — | — | — | 5½ |
| 3 | 173 | 155 | 89.60 | — | — | — | 2½ |
| 4 | 184 | 148 | 80.43 | — | — | — | 7¼ |
| 5 | 195 | 145 | 74.36 | — | — | — | 4 |
| 6 | 174 | 154 | 88.51 | — | — | — | 7¼ |
| 7 | 178 | 148 | 83.15 | — | — | — | 2½ |
| 8 | 182 | 144 | 79.12 | — | — | — | 6 |
| 9 | 183 | 140 | 76.50 | — | — | — | 5½ |
| 10 | 175 | 150 | 85.71 | — | — | — | 5½ |
| 11 | 190 | 139 | 73.16 | — | — | — | 5 |
| 12 | 176 | 143 | 81.25 | — | — | — | 6 |
| 13 | 182 | 142 | 78.02 | — | — | — | 2½ |

ARABS, YEMEN—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 14 | 191 | 147 | 81.22 | — | — | — | 6½ |
| 15 | 174 | 139 | 79.89 | — | — | — | —½ |
| 16 | 179 | 149 | 83.24 | — | — | — | 4½ |
| 17 | 186 | 138 | 74.19 | — | — | — | 4¾ |
| 18 | 178 | 147 | 82.58 | — | — | — | 5 |
| 19 | 176 | 144 | 81.82 | — | — | — | 5½ |
| 20 | 177 | 151 | 85.31 | — | — | — | 6½ |

SHEHER.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 183 | 146 | 79.78 | — | — | — | 1½ |
| 2 | 183 | 146 | 79.78 | — | — | — | —1 |
| 3 | 175 | 143 | 81.71 | — | — | — | 4 |
| 4 | 177 | 152 | 85.88 | — | — | — | 2½ |
| 5 | 167 | 143 | 85.63 | — | — | — | 1½ |
| 6 | 185 | 144 | 77.84 | — | — | — | ½ |
| 7 | 185 | 139 | 75.14 | — | — | — | 1½ |
| 8 | 182 | 137 | 75.26 | — | — | — | 6½ |
| 9 | 187 | 157 | 83.96 | — | — | — | 6½ |
| 10 | 188 | 146 | 77.66 | — | — | — | 1½ |
| 11 | 184 | 146 | 79.85 | — | — | — | 8 |
| 12 | 179 | 144 | 80.45 | — | — | — | 5 |
| 13 | 173 | 144 | 83.24 | — | — | — | 7½ |
| 14 | 176 | 148 | 84.09 | — | — | — | 5 |
| 15 | 195 | 160 | 82.05 | — | — | — | 0 |
| 16 | 184 | 147 | 79.89 | — | — | — | 7 |
| 17 | 173 | 140 | 80.92 | — | — | — | 2½ |
| 18 | 184 | 150 | 81.52 | — | — | — | 3 |
| 19 | 184 | 141 | 76.63 | — | — | — | 3½ |
| 20 | 174 | 143 | 82.18 | — | — | — | 3½ |
| 21 | 184 | 139 | 75.54 | — | — | — | 5 |
| 22 | 182 | 141 | 74.47 | — | — | — | —½ |
| 23 | 173 | 135 | 78.03 | — | — | — | 7½ |
| 24 | 183 | 145 | 79.23 | — | — | — | 1½ |
| 25 | 189 | 150 | 79.87 | — | — | — | 1½ |
| 26 | 184 | 153 | 83.15 | — | — | — | 6½ |
| 27 | 171 | 141 | 82.46 | — | — | — | 5½ |

SHEHER—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 28 | 184 | 153 | 83.15 | — | — | — | 2 |
| 29 | 182 | 139 | 76.37 | — | — | — | 4½ |
| 30 | 173 | 147 | 84.97 | — | — | — | 3 |
| 31 | 191 | 148 | 77.49 | — | — | — | 3½ |
| 32 | 186 | 138 | 74.19 | — | — | — | 5 |
| 33 | 182 | 144 | 79.12 | — | — | — | 3½ |
| 34 | 187 | 148 | 79.14 | — | — | — | 2¾ |
| 35 | 189 | 151 | 79.89 | — | — | — | 6 |
| 36 | 185 | 149 | 80.54 | — | — | — | 3¾ |
| 37 | 177 | 145 | 81.92 | — | — | — | 5 |
| 38 | 179 | 150 | 83.80 | — | — | — | 5½ |
| 39 | 172 | 149 | 86.63 | — | — | — | 3½ |
| 40 | 177 | 153 | 86.44 | — | — | — | 5¼ |
| 41 | 170 | 153 | 90.00 | — | — | — | 2½ |
| 42 | 176 | 138 | 78.41 | — | — | — | ¾ |
| 43 | 172 | 140 | 81.40 | — | — | — | 4 |
| 44 | 192 | 151 | 78.65 | — | — | — | 3½ |
| 45 | 179 | 139 | 77.65 | — | — | — | 3 |
| 46 | 180 | 144 | 80.00 | — | — | — | 8 |
| 47 | 181 | 150 | 82.87 | — | — | — | 3¾ |
| 48 | 180 | 155 | 86.11 | — | — | — | 5½ |
| 49 | 189 | 154 | 81.48 | — | — | — | 8 |
| 50 | 180 | 149 | 82.78 | — | — | — | 3½ |
| 51 | 174 | 154 | 88.51 | — | — | — | 3¼ |
| 52 | 180 | 145 | 80.56 | — | — | — | 4 |
| 53 | 172 | 151 | 87.79 | — | — | — | 5½ |
| 54 | 192 | 157 | 81.77 | — | — | — | 5¾ |
| 55 | 172 | 142 | 82.56 | — | — | — | ¾ |
| 56 | 185 | 145 | 78.38 | — | — | — | 5½ |
| 57 | 177 | 138 | 77.97 | — | — | — | 5 |
| 58 | 182 | 150 | 82.42 | — | — | — | 7¼ |
| 59 | 175 | 143 | 81.71 | — | — | — | -¼ |
| 60 | 185 | 150 | 81.08 | — | — | — | 4 |
| 61 | 174 | 141 | 81.03 | — | — | — | -½ |
| 62 | 168 | 141 | 83.23 | — | — | — | ¼ |
| 63 | 183 | 144 | 78.69 | — | — | — | 2¼ |
| 64 | 177 | 140 | 79.10 | — | — | — | ¼ |
| 65 | 191 | 146 | 76.44 | — | — | — | 4½ |
| 66 | 181 | 144 | 79.56 | — | — | — | 4½ |

SHEHER—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 67 | 194 | 146 | 75.26 | — | — | — | 6½ |
| 68 | 179 | 150 | 83.80 | — | — | — | 4½ |
| 69 | 180 | 136 | 75.56 | — | — | — | 2½ |
| 70 | 172 | 142 | 82.56 | — | — | — | 7½ |
| 71 | 178 | 148 | 83.15 | — | — | — | 5 |
| 72 | 172 | 135 | 78.49 | — | — | — | ½ |
| 73 | 169 | 150 | 88.76 | — | — | — | 3 |
| 74 | 182 | 143 | 78.57 | — | — | — | ½ |
| 75 | 171 | 156 | 91.23 | — | — | — | 7¼ |
| 76 | 189 | 135 | 71.43 | — | — | — | 6¼ |
| 77 | 177 | 145 | 81.92 | — | — | — | 6 |
| 78 | 187 | 149 | 79.68 | — | — | — | 4½ |
| 79 | 180 | 146 | 81.11 | — | — | — | 1¼ |
| 80 | 177 | 143 | 80.79 | — | — | — | 1½ |
| 81 | 180 | 149 | 82.78 | — | — | — | 5 |
| 82 | 175 | 141 | 80.57 | — | — | — | —½ |

COMORO.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 190 | 153 | 80.53 | — | — | — | 3½ |
| 2 | 185 | 158 | 85.41 | — | — | — | 6 |
| 3 | 186 | 145 | 77.96 | — | — | — | 6¼ |
| 4 | 195 | 156 | 80.00 | — | — | — | 5 |
| 5 | 188 | 158 | 84.04 | — | — | — | 6 |
| 6 | 174 | 154 | 88.51 | — | — | — | 9¼ |
| 7 | 191 | 156 | 81.68 | — | — | — | 4¼ |
| 8 | 189 | 163 | 86.24 | — | — | — | 7 |
| 9 | 186 | 148 | 79.56 | — | — | — | 5½ |
| 10 | 184 | 148 | 80.43 | — | — | — | 7 |
| 11 | 176 | 150 | 85.23 | — | — | — | 6½ |
| 12 | 201 | 148 | 73.63 | — | — | — | 6 |
| 13 | 186 | 158 | 84.95 | — | — | — | 5 |
| 14 | 176 | 139 | 78.98 | — | — | — | 4½ |
| 15 | 194 | 160 | 82.47 | — | — | — | 5¼ |
| 16 | 180 | 149 | 82.78 | — | — | — | 8½ |
| 17 | 198 | 147 | 74.24 | — | — | — | 3½ |
| 18 | 185 | 154 | 83.24 | — | — | — | 3½ |
| 19 | 183 | 143 | 78.14 | — | — | — | 3 |

COMORO—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 20 | 193 | 158 | 81.87 | — | — | — | 3½ |
| 21 | 187 | 153 | 81.82 | — | — | — | 4 |
| 22 | 192 | 147 | 76.56 | — | — | — | 5½ |
| 23 | 192 | 135 | 79.69 | — | — | — | 7 |

BILOCH.

| | | | | | | | |
|----|-----|-----|-------|----|----|-------|----|
| 1 | 181 | 145 | 80.11 | — | — | — | 4 |
| 2 | 201 | 152 | 75.62 | — | — | — | 7½ |
| 3 | 182 | 150 | 82.42 | — | — | — | 4 |
| 4 | 177 | 146 | 82.49 | — | — | — | 8½ |
| 5 | 185 | 141 | 76.22 | — | — | — | 3½ |
| 6 | 176 | 147 | 83.52 | — | — | — | ½ |
| 7 | 178 | 155 | 87.08 | — | — | — | 7 |
| 8 | 183 | 148 | 80.87 | — | — | — | 2 |
| 9 | 180 | 148 | 82.22 | — | — | — | 6½ |
| 10 | 184 | 138 | 75.00 | — | — | — | 5½ |
| 11 | 176 | 144 | 81.82 | — | — | — | 5½ |
| 12 | 184 | 145 | 78.80 | — | — | — | 6 |
| 13 | 178 | 145 | 81.46 | — | — | — | 7 |
| 14 | 174 | 144 | 82.76 | — | — | — | 2 |
| 15 | 179 | 146 | 81.56 | 49 | 37 | 75.51 | 3½ |

CUTCH.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 181 | 150 | 82.87 | — | — | — | 2½ |
| 2 | 183 | 140 | 76.50 | — | — | — | 7½ |
| 3 | 180 | 155 | 86.11 | — | — | — | 2½ |
| 4 | 179 | 157 | 87.71 | — | — | — | 4½ |
| 5 | 176 | 162 | 92.05 | — | — | — | 5½ |
| 6 | 180 | 160 | 88.89 | — | — | — | 4½ |
| 7 | 168 | 145 | 86.31 | — | — | — | 5½ |
| 8 | 178 | 156 | 87.64 | — | — | — | 5½ |
| 9 | 183 | 156 | 85.25 | — | — | — | 1½ |
| 10 | 179 | 140 | 78.21 | — | — | — | —½ |
| 11 | 179 | 135 | 75.00 | — | — | — | ½ |

CUTCH—*continued.*

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 12 | 172 | 142 | 82.56 | — | — | — | 5½ |
| 13 | 192 | 148 | 77.08 | — | — | — | 8½ |
| 14 | 181 | 146 | 80.66 | — | — | — | 5½ |
| 15 | 174 | 154 | 88.51 | — | — | — | 3½ |
| 16 | 170 | 145 | 85.21 | — | — | — | 3 |
| 17 | 188 | 149 | 79.26 | — | — | — | 5½ |
| 18 | 173 | 146 | 84.39 | — | — | — | 6 |
| 19 | 180 | 141 | 78.33 | — | — | — | 4 |
| 20 | 173 | 143 | 82.66 | — | — | — | 3¾ |
| 21 | 184 | 143 | 77.72 | — | — | — | 2 |
| 22 | 179 | 148 | 82.68 | — | — | — | 4 |
| 23 | 185 | 151 | 81.62 | — | — | — | 7½ |
| 24 | 188 | 149 | 78.72 | — | — | — | 5 |

PUNJABI.

| | | | | | | | |
|----|-----|-----|-------|---|---|---|----|
| 1 | 198 | 140 | 70.71 | — | — | — | 5½ |
| 2 | 190 | 135 | 71.05 | — | — | — | 6¼ |
| 3 | 200 | 143 | 71.50 | — | — | — | 7 |
| 4 | 192 | 137 | 71.35 | — | — | — | 4 |
| 5 | 193 | 139 | 72.02 | — | — | — | 4 |
| 6 | 192 | 144 | 75.00 | — | — | — | 7¾ |
| 7 | 191 | 138 | 72.25 | — | — | — | 6 |
| 8 | 189 | 134 | 70.90 | — | — | — | 4¼ |
| 9 | 208 | 144 | 69.23 | — | — | — | 7½ |
| 10 | 195 | 141 | 72.31 | — | — | — | 6 |
| 11 | 195 | 137 | 70.26 | — | — | — | 8¾ |
| 12 | 194 | 147 | 75.77 | — | — | — | 4¾ |
| 13 | 188 | 134 | 71.28 | — | — | — | 4¾ |
| 14 | 190 | 144 | 75.79 | — | — | — | 5½ |
| 15 | 188 | 143 | 76.06 | — | — | — | 8½ |
| 16 | 196 | 141 | 71.94 | — | — | — | 8 |
| 17 | 184 | 135 | 73.37 | — | — | — | 8¾ |
| 18 | 192 | 136 | 70.83 | — | — | — | 6¾ |
| 19 | 195 | 137 | 70.26 | — | — | — | 5½ |
| 20 | 190 | 143 | 75.26 | — | — | — | 10 |
| 21 | 195 | 141 | 72.31 | — | — | — | 5¾ |

PUNJABI—continued.

| | Head length. | Head breadth. | Cephalic index. | Nasal length. | Nasal breadth. | Nasal index. | Stature (inches over 5 feet). |
|----|-----------------|------------------|--------------------|------------------|-------------------|-----------------|--|
| 22 | 194 | 147 | 75.77 | — | — | — | 6½ |
| 23 | 186 | 136 | 73.12 | — | — | — | 10 |
| 24 | 197 | 141 | 71.57 | — | — | — | 2½ |
| 25 | 202 | 143 | 70.79 | — | — | — | 8½ |
| 26 | 190 | 141 | 74.21 | — | — | — | 4½ |
| 27 | 190 | 134 | 70.53 | — | — | — | 7 |
| 28 | 182 | 135 | 74.18 | — | — | — | 6½ |
| 29 | 186 | 135 | 72.58 | — | — | — | 5½ |
| 30 | 192 | 136 | 70.83 | — | — | — | 3½ |
| 31 | 187 | 138 | 73.80 | — | — | — | 4 |
| 32 | 193 | 137 | 70.98 | — | — | — | 8½ |
| 33 | 185 | 141 | 76.22 | — | — | — | 5½ |
| 34 | 197 | 143 | 72.59 | — | — | — | 2½ |
| 35 | 188 | 140 | 74.47 | — | — | — | 7 |
| 36 | 186 | 133 | 71.51 | — | — | — | 4½ |
| 37 | 194 | 140 | 72.16 | — | — | — | 5½ |
| 38 | 185 | 139 | 75.14 | — | — | — | 8½ |
| 39 | 181 | 146 | 80.66 | — | — | — | 7½ |
| 40 | 191 | 138 | 72.25 | — | — | — | 4½ |
| 41 | 195 | 137 | 70.26 | — | — | — | 11½ |
| 42 | 188 | 134 | 71.28 | — | — | — | 5½ |
| 43 | 186 | 135 | 72.58 | — | — | — | 1½ |
| 44 | 192 | 139 | 72.40 | — | — | — | 6½ |
| 45 | 199 | 133 | 66.83 | — | — | — | 7½ |
| 46 | 188 | 132 | 70.21 | — | — | — | 7½ |
| 47 | 195 | 140 | 71.79 | — | — | — | 3½ |
| 48 | 186 | 137 | 73.66 | — | — | — | 5½ |
| 49 | 184 | 139 | 75.54 | — | — | — | 7 |
| 50 | 202 | 135 | 66.83 | — | — | — | 4½ |
| 51 | 187 | 137 | 73.26 | — | — | — | 7½ |
| 52 | 187 | 135 | 72.19 | — | — | — | 6 |
| 53 | 197 | 142 | 72.08 | — | — | — | 11½ |
| 54 | 194 | 139 | 71.65 | — | — | — | 3½ |
| 55 | 208 | 130 | 62.50 | — | — | — | 3½ |
| 56 | 188 | 141 | 75.00 | — | — | — | 5 |
| 57 | 190 | 137 | 72.63 | — | — | — | 12½ |
| 58 | 195 | 144 | 73.85 | — | — | — | 5½ |
| 59 | 194 | 131 | 67.53 | — | — | — | 7½ |
| 60 | 189 | 143 | 75.66 | — | — | — | 6½ |

SOME UNRECORDED CUSTOMS OF THE MEKEO PEOPLE OF BRITISH NEW GUINEA.

BY R. W. WILLIAMSON, M.A.

[WITH PLATES V, VI.]

IN my expedition in 1910 to the Mafulu Mountain people of British New Guinea I selected as my route into the interior the paths leading through the Mekeo villages scattered over the low-lying land on both sides of the lower reaches of the St. Joseph River. I did not during this journey inland attempt any serious or systematic ethnological work; but I picked up odd scraps of information from various sources, and I was fortunate, during a portion of the journey, in having the companionship of Father Egidi of the Mission of the Sacred Heart, whose name is already familiar to students of New Guinea ethnology, and from whom I obtained a good deal of information concerning the Mekeo people. Some of the material thus collected has not, I think, been previously published, and, though necessarily of a fragmentary nature, it will not, I hope, be regarded as devoid of interest.

DRESS AND ORNAMENT.

The perineal bands of bark cloth worn by the men and the fringe petticoats worn by the women are already well known. There are four forms of this petticoat, namely: (1) A plain uncoloured petticoat called *lalia*, made out of wild grass, and worn for working in the gardens, fishing, etc. (2) A petticoat called *engia*, made out of either sago leaves or the fibre of certain forms of banana, or a broad-leaved plant called *ongongo*, which is grown in the gardens. This petticoat is used in ordinary daily life; its material is usually stained black, this being done by burial for a night in black oozy mud; but it is often left in its natural colour, and sometimes it is tinted in various colours, and the *engia* of young girls often have alternating red and yellow perpendicular bands, like those of the *kufu* mentioned below. (3) An ornamental petticoat called *kufu*, made out of sago leaves, and coloured red and yellow in perpendicular bands. This petticoat, which is longer and more thickly made than the others, is worn over the *engia* at dances. It usually has a more or less elaborate border or fringe hanging over the upper part of it. The ornamentation and colouring varies, different families adopting different designs. (4) A petticoat called *ngopemala* (meaning "attached by a band") worn as mourning. This garment, especially the form worn by a widow, is very short, and, instead of passing all round the waist, it only hangs in front and behind, leaving the hips and thighs bare on both sides. It is stained black.

The tattooing of a girl is commenced when she is quite young, and is afterwards added to from time to time prior to her marriage; but no further tattooing is done after then. The amount of tattooing varies considerably, being sometimes confined to a little decoration on the abdomen, and sometimes extended more or less all over the front and back of the body and the face, the latter being the part done last.

When a girl is fully tattooed she is called *faule*. The occasion is sometimes celebrated by a feast held by the mother's relatives, for which several pigs (not dogs) are killed, the killer being the chief of the clan, and the subsequent performances being somewhat similar to those of the Roro people, as described by Dr. Seligmann.¹ This feast, however, only takes place when the girl's tattooing is complete and includes the face, and it is a costly one because of the number of pigs required. It is, therefore, only held occasionally.

Men do not usually tattoo, but they sometimes do so either before or after marriage, and tattooing on the breast used to be a sign that a man had taken human life.

Another mode of decoration is that of a round scar about one centimetre in diameter upon some part of the body, usually the arm; it is made by burning the skin with the incandescent point of a small wooden stick which has been lighted, and the sore so produced leaves a permanent scar; and in the village of Inavauni young girls often have six or seven lines similarly burnt on each arm. But there is no practice of producing cicatrices by cutting.

Both men and women have the upper and lower lobes of their ears and the septa of their noses pierced. It is generally done when they are young. Women usually only wear their nose ornaments on special occasions, but men wear them more generally.

Painting of the faces and bodies is adopted by both sexes, and is especially indulged in at dances; but young dandies quite commonly paint their bodies elaborately on other occasions also. The painting of the body is usually red, and, the pigment being often mixed with oil, it gives the body a very shining appearance. Various colours and designs are selected for the face, but a man in mourning may only paint his face black, to which are sometimes added spots of white or yellow. The colours adopted are usually a muddy black and yellow.

The ornaments worn are already well known, but I may mention the fact that a married woman must, after the birth of her first child, put aside all her ornaments.

FAMILY RELATIONSHIP.

They have no word representing the idea of a family. Their words for father and mother are *ama* and *ina*; but these words are not confined to actual parents, nor are there any expressions so confined. All brothers and sisters of a man's father and mother are also his fathers and mothers. Similarly, the word *ufu*,

¹ *The Melanesians of British New Guinea*, p. 265.

which means a grandparent, includes, not only the grandfather and grandmother, but all their brothers and sisters, and the words *apa* and *ngoki*, which mean great-grandparent, and the little used word *a'e*, which means great great-grandparent, all include, not only the actual ancestors, but also their brothers and sisters. Every relation on the mother's side, other than true uncles and cousins, is, however, generally called *ekesaa*, which means friend.

The relationship of a person, whether male or female, to his father or mother is *ngau*. His relationship to his grandparent, great-grandparent and great great-grandparent is indicated by the words used to express their relationship to him. And here again the persons with reference to whom these words are applicable are both the ancestors themselves and the brothers and sisters of those ancestors. In fact the inclusion as relatives of collateral relations of the actual ancestors is carried on indefinitely, so as to include all members of any given generation.

There are no general inclusive words to express the relationship of brother or sister. The word *ao* means a brother older than the speaker; *aki* means one younger than the speaker, and *avacua* means a brother or sister, either younger or older, who is of the sex other than that of the speaker.

SOME RESTRICTIONS AND TABOOS.

An unmarried man living in the *ufu* or *ngove* must not drink either water or coconut milk unboiled, nor may he chew sugar-cane or eat ripe banana or any kind of flesh or fish or other animal food. A woman is forbidden certain kinds of banana, and for a period after the birth of a child she must not eat kangaroo or cassowary or certain fishes, and young people may not eat any sort of eel. All men who are about to take part in a big dance are for a few weeks previously under the food taboo of bachelors above stated, and during that period they must not eat boiled food of any sort, and must only eat between sunset and sunrise (not in the daytime), and, if married, they must not cohabit with their wives. The restrictions prior to a big dance all apply also to a period of one day before starting off on a big hunting or fishing expedition.

Preparations for an important feast involve the allocation to its requirements of clumps of coconut, areca nut and sago; and upon these a taboo is placed by the chief of the clan giving the feast, and no one must touch them. Masked men called *kaiva kuku* go every day to the groves of palms thus specially prohibited to see that the taboo is not infringed; and if anyone is caught doing so, he is tied hand and foot to a pole erected among the trees, and is not released until his friends have paid a fine of dogs or pigs.¹

Also the owner of any of these trees, who specially requires their fruit for a specific purpose, will often put upon them a taboo sign, generally a wisp of pandanus leaves tied round the trunk, and no man will dare to violate the magic taboo thus indicated, being in fear of the evil which would befall him if he did so.

¹ Compare the Roro custom of enforcing food taboo as described by Dr. Seligmann (*The Melanesians of British New Guinea*, pp. 299, 300).

There is no general taboo against the mentioning of or touching any places or things.

Bachelors and widowers must never cross the open village space by daylight, except at dances and public ceremonies.

SOME POINTS OF ETIQUETTE.

Every man has his own personal name, which is not necessarily the same as that of his father, and his intimate friends will in ordinary daily life address or speak of him by that name. Other people, however, must address or speak of him more formally by adding to his personal name that of his father; and even his own relatives and more intimate friends will do this on ceremonial occasions. If a man addresses another by his ceremonial double name, the latter must at once respond by repeating the double name of the man addressing him. Similar rules apply to women also. A widow or widower, however, is addressed, not by her or his personal name, but as "widow" or "widower," and this practice sometimes continues after remarriage.

If A speaks to B about an article belonging to himself (A), he must speak of it as "our," as though it belonged to both A and B; but B in replying must refer to it as "your," that is the property of A only.

If A and B are related, but differently so, to a third person, A must in speaking to B mention that person with reference to B's relationship, and not to that of A. For example, if this third person is A's cousin and B's uncle, A will refer to him as B's uncle and B will do so as A's cousin. If, however, the relationship of the third person to A and B is similar, either of them, in speaking to the other, will refer to this person as our uncle or our cousin.

A person speaking of himself to a relative refers to his relationship. Thus A, in speaking to his nephew, B, says, "I your uncle," etc., and similarly B will say to A, "I your nephew."

A person must never hand anything to another behind the back of a chief or across his body (*e.g.*, his legs or knees); it must always be passed across in front of the chief.

The only form of physical salutation is the rubbing of the nose against the nose or hand, and even this is only done between great friends after a long period of separation.

IAUAFANGAI AND KANGAKANGA (CLAN BADGES).

These matters are somewhat fully dealt with by Dr. Seligmann in *The Melanesians of British New Guinea* (pp. 320-335); but Father Egidi gave me some further information upon them, which I propose to repeat.

The term *iauafangai* refers to a repetition, and its origin is the fact that any member of the clan will repeatedly call out the name of his *iauafangai* in time of danger, great delight, or other moment of special excitement. Father Egidi told me that, if the *iauafangai* is an animal, a man will not now, as a rule, be unwilling to kill it, but he will not himself eat it, though he will give it to someone else to

eat. He also said that the old unwillingness even to kill it still survives with certain clans, and indeed among them, if the *iauafangai* animal is caught in a snare or trap, they will shed tears at the wrong committed, and release the animal. The *iauafangai* is inalienable.

The *kangakanga* is, as stated by Dr. Seligmann, a clan badge; but two clans may have as *kangakanga* the same animal or plant or part of one, the differentiation between the two consisting in the place or the way in which it is carried. Dr. Seligmann's tables on pp. 369-372 of *The Melanesians of British New Guinea* do not appear to disclose any marked distinguishing identity or similarity between the *kangakanga* of *pangua* belonging to the same *ngopu* group. The animal or plant represented by the *kangakanga* may be killed and eaten by any member of the clan, and these badges may be sold to or exchanged with another clan.

The use of the term *kangakanga*, however, is not confined to a clan badge. It is applicable to anything to which a person or a clan has an exclusive right, amounting, in fact, to something in the nature of a patent right. As an illustration of this Father Desnoes told me that once, having made for himself a bamboo pipe with a division in the middle by which it could be separated into two, and having afterwards on another occasion made a hole at one end of the pipe by which he could hang it to the button of his shirt, he told the people that each of these two improvements was his *kangakanga*, and they must not imitate it; and he informed me that, though this was said only in joke, it was, in fact, a valid claim, and would have been recognized as such if he had required it. Similarly, a new variation in the mode of building a house may be *kangakanga*; in fact, anything may be so, provided it is something visible, such as a design, and not merely an abstract idea.

I must draw attention to the fact that the attitude of the people as regards killing and eating of the *iauafangai* and *kangakanga* respectively, as above stated by me, does not tally with that explained by Dr. Seligmann,¹ and say that he thinks that there has been a misunderstanding between me and Father Egidi, arising from the confusion in the native mind between these terms, to which he has himself referred.² This I frankly admit to be quite possible.

As regards the term *pangua*, which is stated by Dr. Seligmann to mean a clan, Father Egidi said that, strictly speaking, this word represents a collection of people of the same clan living together in one village; but that the term is also often used to indicate the whole clan, perhaps because a clan is almost always collected together in one village, or because there is not in Mekeo any other word which can be strictly regarded as meaning "clan." Indeed the idea of the *pangua* seems often to be associated with that of the village, as a man living in the Mekeo village of, say Veifaa, would speak of his village, not as Veifaa, but as either Ongofoina or Inawi—these being the names of the two clans occupying Veifaa.³

¹ *The Melanesians of British New Guinea*, p. 320.

² *Ibid.*, pp. 321, 322.

³ This fact is referred to by Dr. Seligmann in *The Melanesians of British New Guinea*, p. 312. Compare with the word *pangua* the first portions of the names Hanuabada (one of the Motu villages of the Port Moresby group) and Vanua-lava (one of the Banks Islands).

BIRTH.

When a woman's first child (either a boy or a girl) is born, the people of the village collect near her house and sing all through the night; and the next morning her husband kills a pig or a dog for them, and they have a feast. There is no dancing or ceremony in connection with this event, and the feast is omitted if the village is in mourning for a recent death.

ASSUMPTION BY A BOY OF HIS PERINEAL BAND.

The ceremony and feast in this case are, I think, substantially the same as those of the Roro people, as described by Dr. Seligmann,¹ but they do not generally occur till the boy's age is something between 12 and 16, the period often depending upon the father's ability to provide the feast. Until recently the boy wore nothing until the holding of this feast. Now, however, the boy commences to wear his band earlier, and though the ceremony still occasionally survives, it does not take place until some time after the date when the boy begins to wear the band. The fact that the village is in mourning is no bar to the ceremony, and the mourning is not removed for it.

SOME SEXUAL AND MARRIAGE CUSTOMS.

Paying court to the girls and women, whether with a view to ultimate marriage or merely for present amusement, is the constant thought and chief diversion of every young Mekeo man who respects himself; and in his old age he will relate with pride his successful efforts to induce a girl to leave her relations, or a married woman her husband, and to come away with him.

The young man so enjoying himself must submit to various restrictions, without which he will not attract the favourable notice of the girls and women. He must in particular submit to the bachelor's food taboo already referred to, and he must not bathe. There are also other matters of a special character. Moreover, when he reaches the stage of making direct advances to a girl, he must, as a rule, refrain from all food, except a little roast vegetable taken with ginger in the evening, and he must always show himself oiled and smart, and be ready and able to help the older men in shooting, fishing, housebuilding and other matters.

This special food taboo appears, however, to depend as regards its rigour upon that adopted by the man's mother immediately after his birth, and, if she has not submitted to a severe taboo on that occasion, he is also relieved of the need for it to a considerable extent.

Feathers are often used as visible signs with reference to these matters. If a young man puts a yellow cockatoo crest feather in the upright white cockatoo feather commonly worn by him in his hair, this tells all the world that he is courting a woman who has already had a child; but, if for the yellow crest feather

¹ *The Melanesians of New Guinea*, p. 256.

he substitutes a small fragment of red cloth, the intimation is that the woman is *enceinte*. A white hornbill feather ornament also, though commonly worn in the villages without significance, may be used as a sign that the courted woman is married; and a speckled feather indicates that she is tattooed. A man approaching a girl at work in the gardens, and placing any one of these feathers in a tree near to her, or hiding behind a bush and showing the feather above the bush, is offering marriage, and indeed the mere act of approaching her close with the feather in his hand may have the same significance.

If a girl takes a fancy to her admirer, she often makes the next move by sending him some areca nuts or tobacco, or even by asking him to make some plaited bracelets for her. A young child or any other friendly person will serve as messenger, and naturally enjoys the goodwill of the couple. This message of the girl is, in fact, an invitation to the man to meet her, which he will do on a day which seems to him most propitious. He finds out where the girl is working, and, having well oiled and ornamented himself, he repairs to the spot, and there, concealing himself, peeps at her. If she is alone, he whistles softly to her, and if she is with some one else, he throws to her from his concealment an areca nut shell or other light object. The girl looks towards the spot from which the whistle or missile has come, sees the man, and, if so inclined at the moment, comes nearer to him.

A young man will sometimes pay a visit of this sort without invitation; but he runs some risk in doing so, as, if the girl is not in the humour to go to him, she will perhaps not merely refuse, but will heap terrible insults upon him, even using her hands against him, and sometimes invoking the help of her relatives.

If the girl approaches her lover on his visit, they remain together, smoking and talking, probably among other things discussing the possibility of an elopement; and after this a continued relationship is established between the two until the day when the man induces his parents to find the price to be paid for the girl, or perhaps persuades her to elope with him.

It is said by the Mekeo people that, if the intention of the young couple is marriage, there will not, as a rule, be illicit intercourse between them at these preliminary meetings or afterwards prior to marriage. But besides these legitimate visits there are many which have no other end but illicit relationship.

In all these matters, whether the intention be legitimate or otherwise, a multiplicity of charms of various kinds—sweet substances mixed with oil, crystals, love philtres and other equally potent agents¹—are used to induce compliance. The rising sun or dawn would almost appear to be the patron saint of love, for a young man will often at dawn remove his covering band and, holding it to the east, beg for good luck that he may prevail with many girls and women.

A boy may perhaps marry at the age of about 13 or more, and a girl at 10 or more; but as a rule the youngest ages would be more like 18 for a boy and 16 for a girl.

¹ The man's seminal fluid is an ingredient very commonly used.

There are no ceremonies or special restrictions to be performed or undergone by a boy prior to marriage other than those already mentioned, and no change of dress or other visible indication is adopted to signify that a girl has attained to a marriageable age (*e.g.*, she may or may not be tattooed); but the girl will probably be more carefully watched. Also no special restrictions are placed upon a couple betrothed in infancy, except that after they have attained a marriageable age it is proper that they should avoid each other, though the girl must then cook for her future husband, and bring him the food to the *ufu* of his clan.

Mekeo marriages are governed by a rule of exogamy which makes it improper for a man to marry a girl of his own clan, or even of his own *ngopu* group, of whatever village she may be, though he may marry a girl of his own village who is not of his clan or *ngopu* group. This subject has, however, been dealt with by Dr. Seligmann.¹ Also marriage by a man with any girl related to him in the male line is forbidden, however distant her relationship to him may be. But he may marry a girl whose relationship with him is in the female line, provided that his and her parents are sufficiently removed in relationship from each other. For example, marriage between the children of two sisters (first cousins) is not allowed, and even marriage between the children of those children (second cousins) is not strictly regular, though as regards the latter they constantly shut their eyes to the irregularity and permit it.

The negotiations for a marriage are conducted by the boy's male relatives, who, whether the boy and girl are of the same or different villages, go to the *ufu* of the clan of the girl's father in his village or the *ngove* of his *ikupu*, taking with them and displaying the articles, other than animals, which they offer as the marriage price, and intimating what pigs, and perhaps dogs, will be given. The girl's relatives consider the offer, both as regards the articles displayed and the animals promised; but they are careful not to remove any of the former until they have decided to accept the offer, as removal is a sign of acceptance. A girl must always be solemnly bought; otherwise her family would be dishonoured.

The girl's family, having accepted the offer, take possession of the things actually handed to them, and immediately, or within a day or two afterwards, make an armed raid upon the boy's clan in his village for the pigs, and perhaps dogs. They go to the houses of the boy's relatives, and carry off everything they find there, and they make a general raid upon the pigs, dogs and coconuts of the entire clan in the village. The raid, however, has been anticipated and prepared for by removal and concealment, and the raiders, so far, at all events, as pigs and dogs are concerned, do not get more than had been promised them.

The girl's relatives feast on any pigs which have been given to them, but there is no special day on which this feast must take place.

On the evening of the day on which the marriage has been agreed on (whether the raid has or has not been made), the girl, fully decorated, and two of her girl friends are taken to the house of the boy's father, and they remain in the

¹ *The Melanesians of British New Guinea*, pp. 363-365.

house for that night, and, if the raid has not been accomplished that day, they remain there till this has been done. Then a string of shells is given to each of the two friends, and they return home, leaving the girl in the house of the boy's father.

During all this time the boy has been hidden away somewhere in the village or the bush; but, the girl being still in his father's house, his friends seek him out and bring him home. He finds his bride seated on a mat in the verandah of the house, and he seats himself close beside her, this being the first time he has sat in the house since he was a young boy and went to live in the *ufu* or *ngove*. It may be, if the marriage has been arranged by the parents, that the boy and girl have hitherto not known each other, and in any case they pretend not to do so; indeed the girl turns her back upon the boy, who in return sits with his back to her. There may be reluctance on the part of one or both of the couple to consent to the marriage, and the girl will probably feign reluctance, even if she does not feel it. Family persuasion may, therefore, be requisite, and during its continuance the couple remain seated back to back on the verandah. Then, the boy being willing, and the girl having overcome her genuine or feigned hesitation, the girl passes behind her back to the boy a piece of betel, or perhaps a pipe, into which she has inserted a cigarette, which she has lighted and smoked, so as to fill the pipe with smoke, in the usual way; and his acceptance and chewing of the betel or smoking of the pipe is the signal for one or other of those present to call out the names of the boy and girl and announce the marriage in a loud voice, whereupon all the others applaud, and the ceremony is completed. Then if (as is usual) the husband is not already oiled, his friends take him away and oil him and bring him back to his wife. That night the wife again sleeps in the house of the husband's father and the husband sleeps in the *ufu* or *ngove*.

At a later date, I think it is when the marriage is consummated, the wife removes the husband's waist belt, which until then has always been worn by him very tight and covered, but which he will afterwards wear more loose and uncovered; and it is a common thing for a youth who is matrimonially inclined to say, "Who will remove my belt?"

Cohabitation and consummation of the marriage may be postponed for two or three months, and in the meantime the wife still continues to live with her husband's parents and the husband lives in the *ufu* or *ngove*; and during this interval the wife must not work in the gardens. She is generally the one who decides when matrimonial relationship shall commence, and one way of signifying her willingness is to suggest to her mother-in-law or sister-in-law that they should go together to the gardens to work. Her presence in the garden is a signal to her husband, who then meets her there. After this, until the young couple have a house of their own, the wife continues to live in the house of her husband's father and the husband is free to live there also, or he may live more or less in the *ufu* or *ngove*.

After an interval of anything between a month or a year or more from the

day of the wedding further ceremonial observances between the families of the husband and wife take place. The relations of the wife give one or more village pigs to those of the husband, and the latter give to the former a similar number of wild pigs. Also the husband's relatives put on to the verandah platform of the *ufu* of the husband's clan a quantity of articles, which are taken up one by one by the wife's relatives, and the latter put on the platform similar articles, which are taken by the husband's relatives, an equal exchange being thus effected. All these matters of mutual giving of pigs and other things are, of course, always arranged beforehand. Then the husband's relatives have a feast of the village pigs which have been given to them, and the wife's relatives have a feast of the wild pigs which have been given to them, the two feasts being generally, but not always, held side by side in two little adjacent gatherings.

Elopements often occur. The girl will probably steal some of her parents' property, and the pair go off together to another village, or into the bush, and remain there until the anger of the girl's parents has been appeased, which may be in two or three days or not for months. The propitiation of the girl's parents is secured by the relatives of the boy by offering a marriage price of articles and pigs; but in the case of an elopement the price is not so great as it is in that of a regular marriage, as there is a certain amount of shame in the girl's family. The raiding by the girl's relatives takes place as in the case of a proper marriage, but there is no further ceremony, and the subsequent interchange between the two families and feasts do not occur.

Polygamy is practised among the Mekeo people, but the number of wives rarely extends beyond three, and generally only wealthy men can afford the luxury. The ceremony on a marriage with a second wife is somewhat similar to that on marriage with the first; but on the second wife coming to the man's house the first wife will often leave it, and he has, if possible, to appease her and induce her to return. One factor which makes for polygamy is the right of the eldest brother or nearest male relative (married or single) of a dead man to the latter's wife. This right may not be exercised by him for years or at all; he may give up his right to anyone else, or he may during a considerable interval go with the woman in the gardens and the bush, and perhaps ultimately bring her openly to his house as his recognized wife. Her entry to her new home, even if agreed to by the first wife, is not a peaceable one—at all events in form. The husband has with him a number of his male friends, all armed with sticks, and the party on reaching the house find the first wife there, and with her they find all her women friends, and possibly some of her male relatives, all armed with sticks. A fight, generally a sham one only, takes place between the two parties, in which the first wife's party try to defend the house against the entry of the second wife, and the husband's party, acting only on the defensive, support her in her effort to get on to the verandah platform of the house. When once she is seated on the platform her position is confirmed, and the struggle ceases.

Divorce is easily effected by either husband or wife, but it is easier for the

husband than for the wife. His method is simply to send the wife back to her father; hers is to leave her husband and return to her relatives. If the latter event occurs shortly after marriage, the ornaments and other articles given as the marriage price are returned. After divorce, both parties are free to marry again.

General sexual morality can hardly be said to exist among the Mekeo people, though immoralities are not openly practised. Boys and girls, unmarried men and women, and husbands and wives all indulge in immorality, and the marriage tie is very loose. Girls are specially free when they are under the marriageable age at which childbirth could occur. There is no punishment for immorality, but the parents of a girl whose indulgence in it is discovered will be very angry with her, if she has reached the marriageable age. Formerly, if a girl became *enceinte* before marriage, she ran the risk of being killed, and at least she would be sent away to be married in a very distant village, so that she should not remain in contact with her relatives and be a constant reminder of the shame which she had inflicted upon them.

CEREMONY ON CONFERMENT OF OFFICE OF CHIEF.

Chieftainship is hereditary among the Mekeo people, but the heir-apparent to the office has not necessarily to wait until the death of his predecessor for his succession. The predecessor can, and often does, in his lifetime, formally confer the office upon a successor who has attained to a suitable age, after which they will both hold the office jointly. They will both sit side by side at any ceremony, and either of them can perform any function pertaining to the office; but they are recognized as only sharing that office between them, and on the distribution of food at feasts only one of them will receive the portion to which the chief is entitled. Indeed this system of joint chieftainship is not restricted to two, and at a function you may see three men—say grandfather, father, and son—all sitting side by side as joint holders of the office.

The conferment by a chief in his lifetime of his office upon his successor, to be held jointly by them, is the subject of an important ceremony. Invitations are sent to chiefs of friendly clans in the same and other villages, and these invitations are not necessarily confined to Mekeo clans, as other tribes, such as the Roro and Lapeka people, may be represented at the feast. The number of invitations sent out is usually large; and, as each invited chief brings with him some of his people (men and women), the feast is largely attended and involves extensive preparation. Some sixty or seventy wild pigs, kangaroos and cassowaries may be killed, smoked and stored away for consumption, and to these, when the time comes for the feast, are added six or seven living village pigs.

On arriving at the village all the invited chiefs make their way to the platform of the *ufu* of the chief's clan, where each has a suitable place assigned to him, the other visitors being in the village enclosure.

When all is ready, the chief who is about to confer his office upon his successor, who may be his son or nephew or some other relative, steps on to the *ufu* platform,

carrying his chief's lime gourd and wearing the insignia of his office, and with him comes the new chief about to be appointed. The old chief then in the presence of the assembled people addresses the other chiefs seated on the *ufu* platform, explaining to them the right of the new one to be a chief, after which he rattles the spatula in his lime gourd, and hands the gourd to the new chief, who also rattles it, and by this act the appointment is complete.

Then comes the feast. First the village pigs are killed and cut into pieces, this generally being done by some member of the chief's family, and the fat of the back in particular being separated from the rest. Then the new chief cuts the backs of the pigs into slices, doing this alone at first, but afterwards being assisted by other chiefs. And finally the portions of these village pigs are distributed among the visitors and there is a general distribution of food—smoked wild pigs, kangaroos, cassowaries and vegetables—followed by a dance, which lasts throughout the night.

FEAST ON COMPLETION OF BUILDING OF "UFU."

This is a big feast, somewhat similar to that upon the conferment of the office of chief, though, of course, the special ceremonies of conferment at the latter do not occur, and the cutting up of the pigs is done by the head chief of the clan.

WAR FEASTS AND CEREMONIES.

War feasts used to be held after a victorious raid upon an enemy or a successful defence against an enemy's incursion, and this feast was the occasion for the donning of the *kefe*¹ or the *iofo* by such of the fighters as had succeeded in killing one of the enemy. The *kefe* is a large disc of white shell, in front of which is fixed a piece of turtle shell fretted in an ornamental design; it is worn on or over the forehead. The *iofo* is an ornament made of a tuft of feathers (usually white) fastened on to a flexible peduncle made out of the quills of cassowary feathers, the upper part of the peduncle being covered with red feathers, and one or more upright feathers surmounting the ornament; it is worn on the top of the head. Formerly only a man who had killed an enemy was allowed to wear these, and they were therefore insignia of which the wearers were greatly proud.

Inter-village fighting rarely occurs now, as the Mekeo people are well under Government control; but hereditary spirit and pride in the wearing of these records of valour makes their owners wish to transmit them to their descendants, and this transmission is the subject of special ceremonies, which are, I was told, similar to the ceremonies of the old fighting days.

¹ Dr. Seligmann refers to the *kefe* as being a clan badge (*The Melanesians of British New Guinea*, pp. 322 and 324), and it appears as such in his tables (*Ibid.*, pp. 369-372). It is possible that the *kefe*, when worn with the significance here stated by me, is made in some special way, or that there is something in the mode of wearing it on the forehead, though I was not informed of this.

Before dealing with these ceremonies, however, I must explain two terms—the *paangi* and the *aipa*.

The *paangi* is the formal ceremonial performance engaged in primarily by a man who has killed an enemy, and is therefore entitled to wear the *kefe* and the *iofo*. He brandishes his spear at the height of his head, and in a loud voice sings a song peculiar to his family, and then in softer tones recounts his act of daring. Where the performer only inherits the right, the act of daring recounted is of course that of his ancestor. This ceremony is, however, sometimes performed by one who has not taken life, and has no inherited right, and it is then an act of bragging or an insulting challenge, intended to provoke a combat in which he may earn the distinction. Also the ceremony is not always performed by the challenger himself; it is sometimes engaged in on his behalf by some one else—especially by a war chief.

The *aipa* is a warlike parade. Those who take part in it range themselves in rows of three, and so run rapidly through the village, brandishing their spears, with intervals of slow measured movements. Sometimes the warriors are attended by a large number of young boys, who beat their drums when the men are running, and during the intervals stamp their feet upon the ground in a rhythmic tread corresponding to that of the men; and I understand that, when all this is done by a large number of people, its effect is truly imposing.

This brings me to the ceremonies, the occasion for which is the formal conferring upon certain individual members of a clan of the right to wear these honourable decorations.

Friendly clans inhabiting the same and other villages are invited to attend. A small party of the clan giving the invitation start off in the evening as soon as it is dark, make their way to the invited clans, and there they perform the *paangi* and *aipa*, after which they place areca nuts upon the platforms of the chiefs and war chiefs of those clans, and to this is sometimes added a present of a pig.

Prior to the arrival of the guests there is a war dance called *falala*; the important persons and old men seat themselves on the platform of the *ufu*, and then some of the men, generally the older ones, perform the *paangi*; after which the young men and girls form a rectangular group in front of the *ufu*, and there dance to the beating of drums and the music of their singing, the men brandishing their spears, and the girls swinging their grass petticoats from side to side in the usual way. A pile of coconuts is provided, with which the singers ease their throats and quench their thirst.

When the night draws in the guests arrive, all armed with spears, and congregate at the end of the village; they are silent, as also are the people of the village. Then the war chiefs and war-magic chiefs (*fa'ia lopia*) of the guests one by one perform the *paangi*, the hosts silently watching them. Next the hosts perform the *aipa*, after which the guests are presented with areca nuts, which are received by them as symbols of friendship, and the hosts retire to the end of the village. Afterwards the guests perform the *aipa*, traversing in doing so the whole

length of the village enclosure; and, when this is finished, hosts and guests join together, and the war dance commences, and lasts through the whole of the night and part of the following day.

On this day food, which includes raw meat, is distributed among the guests, and the conferring of the *kefe* and *iofo* begins.

All the recipients of these decorations, that is, all the males of the clan resident in the village who are entitled to wear one of these insignia, but have not yet done so, including all ages from the child at the breast carried by its mother or sister to the white-haired old man, range themselves in two facing lines with a space of about a couple of yards between them. Certain chiefs of the hosts' clan, generally the war chief and war-magic chief, carrying in their hands the decorations to be presented, and singing the war song, perform the *aipa*, progressing in doing so between the two lines from one end to the other, and then back again to the point of starting. And finally these chiefs perform the *paangi* in front of each of the recipients in turn, one after another, in each case proclaiming the valiant deed of the recipient or his ancestor which entitles him to the honour, and present him with his ornament or ornaments. Each one receives the *kefe*; but the *iofo* is only given to such of them as have provided these chiefs with a piece of pig.

It sometimes happens that all the members of the same clan, inhabiting different villages, meet together in one village to have this feast, which they all share in providing; in that case the recipients of the decoration are not only members of the clan living in the village where the ceremony takes place, but include members of the clan from the other villages.

DANCING.

Whilst staying at Father Egidi's village of Inavauni, I had good opportunity of watching Mekeo dancing, which generally began at four or five in the evening, and often lasted all night, and even until ten o'clock the next morning. The following observations are taken from my notes made during one of these evenings.

The dancers were elaborately decorated. Their faces and bodies were stained red, the colour being mixed with coconut oil, and so made bright and shining, and over this general staining they had bright red patches on their faces. The feather decorations of their heads varied from elaborately framed erections, some four feet in height, to a single upright feather, which wagged backwards and forwards in response to the head-bobbing movements of the dance. Some had the *iofo* feather ornament. Their foreheads were decorated with strings of shells and other things, to which was sometimes added the *kefe* decoration; and in their noses they had long pencil-shaped ornaments. Round their necks were hung quantities of beautiful shell and dog's tooth necklaces, to which were added straight shell pendants hanging over their chests, and sometimes their backs. Their armlets, leg bands and belts were often further ornamented with

bunches of flowers or bright coloured leaves, and their painted perineal bands hung down behind almost to the ground. They all carried drums.

The dancing was accompanied by singing and beating by the dancers of their drums. There are many—I think about 40—well-known distinct dances; but I am only able to describe a few of these, as I watched and noted them that evening; and even this I can only do in a very general way.

In the first dance which I saw there were 12 men standing close together, facing one another in two rows of six each, and progressing sideways very slowly in the way shown by the arrow in Fig. 1. There was no dancing in our sense of the word; it was a slow progressive sideways shuffle, accomplished by means of a sort of goose step movement, and each step (that is each double step of both feet) only carried them over 2 or 3 inches. The men of row (1) first moved the left foot 2 or 3 inches sideways, and then followed it with the right foot, and this was the step throughout the dance. Those of row (2) did the same, except that with them the right foot moved first, and was

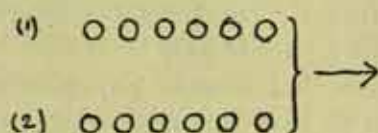


FIG. 1.

| | | |
|----------------|--|-----------------|
| Song | | Repeated ad lib |
| Drum beats | | ditto |
| Foot movements | | ditto |

FIG. 2.

followed by the left. At each movement of the foot they bent their knees forward and a little outward and lifted their heels off the ground; but their toes never left the ground, or, if they did so, the lifting of them was too slight to be observable. These progressive shuffling movements were rhythmical, keeping time with the beating of the drums and the monotonous wailing chant-like song.

I have endeavoured to illustrate the combination in Fig. 2. The top line represents the music of the song. There was a tendency in the singing to make the first and third notes in the first bar rather longer and more accentuated than the second and fourth, but this was not sufficiently pronounced to justify my showing it in the figure. The middle line represents the beating of the drums, three beats and a rest to each bar. The bottom line represents the times of the alternate progressive movements of the left and right feet (in the other row of men the right and left feet). It will be seen that the rate of progress was one step of both feet for each bar. The drum beating varied; more commonly it was as shown in the figure; sometimes, however, there were in each bar two beats followed by an interval of two; at others there were three beats occupying the first half of the bar and one beat at the beginning of the second half; and again sometimes there were four beats to each bar, or only one beat at the beginning of it. As regards the dancing, although the general progressive movement was sideways, as shown by the arrow in Fig. 1, it was occasionally, evidently at known intervals, varied by the two rows stepping forwards towards each other.

Most of the men kept time with their feet and the drums by rhythmical bobbings of their heads backwards and forwards, the feathers on their heads following these movements, and giving them a rather ludicrous aspect. At intervals of a few minutes they all stopped, and there was a general unrhythmical beating of all the drums—a sort of finale, after which for a minute or so they were at ease, chatting and laughing, until one of them began again the monotonous singing and drum beating, in which he was immediately followed by the rest, and they all formed into lines again, and the dancing went on as before until the next rest interval; and so on indefinitely.

Later in the evening some more men joined the dancers, and there were then three rows of them, the original rows (1) and (2) facing each other as before, and row (3) behind and facing the backs of row (2) (see Fig. 3). The progressive movement was the same as before; but later on they occasionally changed it for a time and went in a direction at right angles to the line of the original one (see alternative arrows in Fig. 3), so that row (1) was advancing forwards and rows (2) and (3) were stepping backwards, and *vice versa*.

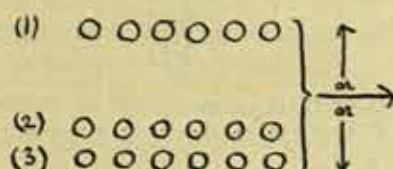


FIG. 3.

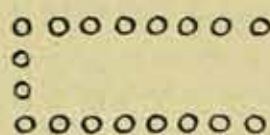


FIG. 4.

Sometimes the form of the group was changed to that shown in Fig. 4, that is, so as to have two facing rows advancing sideways, and two men at one end moving backwards.

Subsequently some women joined the party. These were all girls, as married women do not dance; their decorations, though not generally quite so extensive as those of the men, were very similar, except that they had no ornaments on their heads, and that they wore their red and yellow *kufu* petticoats; they did not carry drums.

The girls were often mixed up with the men in the same lines, but frequently they placed themselves at one end of the group of men. Their movements appeared to be more or less identical with those of the men, except that they did not indulge in the men's genuflexions and head-noddings, and they had no drums to beat. Generally, however (especially, as it seemed to me, when they were at one end of the close-packed lines of men, and so had more space), they swayed their bodies at each step with a side twist of the hip (rather like some of the movements of Arab and other Eastern dancing girls, but quick, instead of being slow), which made their grass petticoats at each step swing round and upwards, first on one side and then on the other, sometimes almost as high as their shoulders. When the girls were at the end of the group they were generally in front as regards the line of progression. I noticed that, when the party commenced dancing again

after breathing intervals, the girls did not always all join in immediately, as did the men, some of them often standing out for a short time, and then slipping into the group, and commencing to dance with the rest, apparently as and when they felt inclined.

In some of the dances each girl stood behind one of the men, holding in her hand the trailing end of his perineal band, which hung from his waist down to the ground, or nearly so. In one dance couples of men and girls walked side by side round the main group.

Later at night many other men and girls came in, and some more complex arrangements and movements began. I shall merely attempt to describe one of these, and I can only do even this in barest outline.

Fig. 5 is a diagram of the arrangement of the people in this dance, the circles being men and the squares being girls holding on to the men by their perineal bands

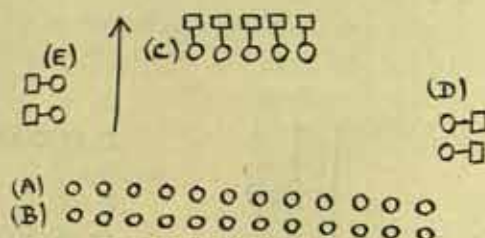


FIG. 5.

as above described. Rows A (12 men) and C (5 men) were facing each other. Row B (12 men) were behind A, but facing in the same direction. Rows D and E (2 men each) were facing inwards towards the open space between A and C. The men in rows C, D, and E had attendant girls holding the bands of the men in front of them. As a matter of fact one man in row C had not a girl; but I fancy this was because there were only eight girls available. The general line of progress of the entire group was in the direction shown by the arrow. Sometimes rows A and B advanced towards row C, and row C with their attendant girls advanced towards A and B, so that rows A and C met face to face. There was a good deal of action and bending down of the head in this; they stooped down as they advanced in an apparently threatening way. Sometimes rows A and B advanced on row C, and row C and their girls retreated backward. Rows A and B never went backward. The couples D and E and their girls often (indeed, I think generally) joined themselves to row A in the course of its advances.

But the movement in this dance which struck me most was one which occurred frequently between the advancing movements of the rows, and in which couples D and E and their girls crossed and changed places, passing each other in front of rows A and C, just as is done in one of the movements of the lancers.

I have already referred to a suggestion that Mekeo dancing is based upon an imitation of the dancing movements of the Goura pigeon.¹

¹ *The Mafalu Mountain People of British New Guinea*, chap. 14.

I may mention a little incident which occurred during this night's dancing, though it has nothing to do with the dance. A man from another Mekeo village, through which I had passed a few days previously, arrived, armed with his war spear, and in a state of considerable excitement. He explained that there was trouble in his village, quarrels having arisen between the two clans occupying it. He had come as a messenger from his clan within this village to call upon the members of the same clan in the village where the dancing was going on (Inavauni) to come and strengthen the body of their fellow clansmen, in case fighting should occur. Father Egidi told me that, when clan disputes arose in a village, fighting did sometimes occur, though he did not regard the matter with apprehension. He said that dances were much more productive of bad fights, as there all sorts of little incidents might occur which would rake up ancient feuds, these being often connected with disputes concerning women, or as to the use of clan badges and such things; and a general fight was always a possible termination of an interrupted dance. I had, when at Inawi, heard of a clan badge fight which had occurred only twelve months previously. A party of Inawi men were going to a big feast and dance at Rarai, and on their way thither had to pass by the village of Beipa. Among their dancing decorations they had included a clan badge, to which they regarded themselves as entitled, but which was claimed by the Beipa people as their sole property. Consequently, as the Inawi party passed Beipa, they were attacked by the Beipa people, and there was a general fight, in which a number of men were severely wounded and one was killed.

HUNTING.

There are four general ways of hunting: (1) with nets; (2) with traps; (3) with nooses; and (4) with spears or bows and arrows.

Net hunting is accomplished in the following three ways: (a) When an animal is seen, it is surrounded with a circle of netting of a diameter of perhaps 50 or even (in the case of a large animal) 100 yards; the men then frighten it, often going inside the net enclosure for the purpose, so that in its effort to escape it gets caught in the net. They sometimes have another outer circle of net, in case the animal gets over the first one. (b) Knowing a spot frequented by the animals, they burn the grass there, and then leave it until the young fresh tempting grass has grown upon it. Round this spot they clear a little path, in which they erect a circle of upright sticks about 3 or 4 feet high, the circle being generally a larger one than in the case of (a), sometimes as much as 300 yards in diameter. Then in the evening, prior to the rising of the moon, a number of men and women go to the place, and the men fix a complete circle of nets round these sticks, after which the women go into the enclosure, and by shouting and making a commotion frighten whatever animals are there, and the latter in their effort to escape are entangled in the net and killed by the men. (c) Another method, used specially for pigs, is to put in a place where traces of the animals are found some wild root (generally roasted), and to repeat this for several days, until the animals get into

the habit of going there for it. They then surround the place with a net as in (b), and the men place themselves in a little shelter about 300 yards away, one or two of them, however, remaining by the circle, and keeping a watch for the animals; and as soon as there is one in the circle, they all come in and catch and kill it. Women do not take part in this, as no shouting is needed.

Traps are simply made in the common form with heavy timbers, the supports of which have a catch, which the animal disturbs in trying to get to the bait inside, and so gets caught.

Nooses are made of rope; they are laid on the ground, or hung on a tree, and have attached strings by which the people, who watch in hiding a short distance away, can tighten the noose the moment an animal gets into it.

Pigs are generally hunted with nets by methods (a) and (c), with traps, with spears, and with bows and arrows, but not with nooses. Kangaroos and wallabies are hunted with nets, method (b) and occasionally (c), but not (a), being used; also with spears and bows and arrows, but not with traps or nooses. Cassowaries are hunted with nets, method (a) being used, also with spears and bows and arrows, and sometimes with nooses, but not with traps. Kangaroo rats are hunted with spears, bows and arrows and traps. Cuscus are hunted with spears and bows and arrows. Crocodiles are hunted with nets by method (a), the nets being placed in the water. "Iguanas" (monster lizards) with spears and bows and arrows. Birds with traps, nooses, spears and bows and arrows.

All the above animals are used for food. The tusks of the pigs are used for making carving tools and ornaments. The bones of the kangaroo, wallaby, and cassowary are used for making forks and other implements. The skin of the cuscus and in a lesser degree that of the crocodile are used for making ornaments, and that of the "iguana" for making the tympanic membranes of drums. The feathers of the cassowaries and of the other birds are used for making ornaments.

FISHING.

Various species of river fish are caught by the Mekeo people, and they have several ways of doing this.

Men fish with a hook baited with ground worm or other animal food. They do not use rods, but tie their lines to shrubs or trees, and so leave them during the night, going to them the next morning to see if fish have been caught.

Men and women also, when the streams are low, place across a side creek a wicker weir, in which are fixed a number of basket fish traps of the hour-glass type, which catch the fish as they are swimming up the stream. Sometimes children walk up these creeks, driving the fish into the traps. There is also a similar method of catching large fish swimming up the stream itself.

Women catch fish with a small hand net about 2 feet in diameter, and less than 1 foot deep, the handle being made of rattan, which is bent round at the end to hold the net. With these nets they wade up-stream in water which reaches to their knees, or a little over.

When creeks are low, and big pools are left, men erect wooden platforms in the creeks, and, crouching upon these platforms, catch the fish with nets somewhat similar to those last mentioned, but larger and with long handles.

Large fishing-nets are used by men and women. These nets are placed across the stream, being weighted at the bottom with large stones. They drag the net slowly up stream, the stones being moved as they do so by divers. This method is generally employed at night.

Fish are also killed by men with three-pronged darts and with bows and arrows, though the latter method is not employed much.

Another method is that of poisoning the fish by putting into the water the juice of the fruit of a tree, called by them *pango*, the dead fish being collected as they float on the top of the water.

Children catch cray fish by tying a number of little lines to plants by the margin of the water, the lines having no hooks, but having tied at their ends pieces of coconut, which the cray fish seize, and so can be pulled up. They leave the lines, returning to them at intervals to see if any cray fish have been caught.

FUNERAL AND MOURNING CUSTOMS.

The Mekeo people bury their dead in underground graves; and, wherever the death occurs, the grave is always in the dead person's own village.

Immediately after the death of any person, other than a little child, all the people of the village in which he died commence a period of mourning; but, if he belonged to another village, to which he is taken for burial, this mourning ceases immediately upon the removal of the body, and it then commences in his own village. There is no blackening of the bodies at this stage; but the mourners abstain from dancing or singing or any other noisy amusement.

The relatives of the departed begin their mourning immediately after the death, whether it occurs in their village or elsewhere; they must abstain, not only from noisy amusements, but also from the use of red paint on their bodies, and the male relatives must wear nothing that is painted any colour; also the grass petticoats worn by the female relatives must be the *ngopemala*, already described.

Before describing the funeral ceremony, I must say that any persons of other clans who have taken wives from the clan of the deceased have the right to be present at the funeral, and indeed it is their duty to be there, and to carry out the funeral arrangements. These people are called *ipangava* (*ipa* = brother-in-law, and *ngava* = father-in-law). This custom must not, Father Egidi said, be confused with Dr. Seligmann's observations concerning the *ufuapie* relationship which commonly exists between two clans, and in connection with which Dr. Seligmann refers to the participation by one clan in funeral ceremonies occurring on the death of a member of another clan of the same *ufuapie* group, and to the idea that it is considered desirable that a man should seek his wife within that group.¹ The

¹ *The Melanesians of British New Guinea*, pp. 358-365.

association referred to by Dr. Seligmann is a clan one, and, as regards funerals, relates mainly to the regulations concerning the putting on and removal of mourning; whereas the one to which I now refer is a personal one, applying only to people who have actually married into the clan of the deceased, and their rights and duties are confined to the conduct of the funeral.

The deceased is washed and dressed with a handsome perineal band, or in the case of a woman, a decorative dancing petticoat (*kufu*), and is adorned with various ornaments. The body is then exposed in the *ufu* of the clan, or on a scaffold erected for the purpose, and the widow or widower and nearest relatives keep guard over it and weep. Then all the other relatives, including often remote ones who have been invited, come in to see it and weep over it. After everyone has arrived, and when the body begins to decompose, they remove the ornaments, wrap it up in a sort of mat, made out of the ribs of the leaves of the sago palm, and carry it with tears and lamentations to the grave, which has been dug by the *ipangava* in the village, close to the dead person's house.¹ In the case of a chief the lowering of the body into the grave is accompanied by much beating of drums, several times repeated, and blowing of conch shells. After placing the body in the grave, a little earth, just enough to cover it, is thrown into the grave, whereupon the widow or widower, who, with much weeping, and supported by relatives, has followed it to the grave, throws herself or himself upon it, and may remain there a long time, during which it is left only half buried in the way described. Eventually the grave is filled in with soil, and now-a-days this is usually done pretty soon.

After the funeral the nearest relative (husband, wife, brother, or sister, etc.) of the deceased must disappear entirely from sight; enveloped in a rude bark cloth covering, he must spend the days hidden from sight, and pass the nights weeping on the grave, though sometimes he will, during the night, make a tour round the village, visiting the spots frequented by the deceased, and wailing and calling to him. These midnight walks are only continued for a few days, but the isolation and lamentation at the grave continue till the formal adoption of mourning to be mentioned below. A widow, whilst wrapped up in this covering, discards her grass petticoat altogether.

The *ipangava*, on the other hand, have a much more pleasant time as a reward for their services at the funeral. A festival called the *ipangava ipaangi* is held. This is a comic festival, which takes place immediately after the funeral. The *ipangava* all assemble at the *ufu*, and dishes filled with vegetables are brought to them there, each of these dishes having placed upon it some ludicrous object with which the food is decorated. These objects may be ladles used for conveying food to the mouth, these being decorated with valueless feathers; or they may be half coconuts stripped of their shells, which the *ipangava* are supposed to place on their foreheads or in their hair, in place of the usual *kefe* shell mentioned above; or they may be the bags which are generally carried upon the arms, but which in

¹ The Government now tries to enforce burial in cemeteries, outside the villages.

this case are old and torn; the humour in all cases being the uselessness of the gifts. But the real fun begins afterwards, when the leg of a boar or kangaroo is hung on to a pole in the middle of the platform of the *ufu*, and all the *ipangava* have to bite at it (apparently a sort of game of "bob-apple"), the younger ones probably being shy at eating in the presence of women, but the appetites of the older ones giving a vigorous zeal to their efforts. In this way a more cheerful tone is introduced into the party, and the occasion terminates with a distribution among them of presents given by the mourning family. Occasionally all this entertainment of the *ipangava* is omitted, and they only receive their presents.

The general mourning restrictions above described continue until the ceremony at which what I may call the more formal adoption of mourning begins, this ceremony occurring after an interval which may be short or may be of several months' duration, the delay arising from the necessity of catching the necessary wild pigs, a process which may take some time.

At this ceremony all the relations of the deceased, both near and distant except the young men, present themselves at the *ufu* of his clan, their bodies being more or less daubed with black, and those of the nearer relatives being generally blackened all over. The heads of both men and women have been completely shaved, except that the former have left two little tufts of hair over the ears. There is a feast and killing of pigs and distribution of pig flesh and vegetable food. After this all the relations, including children, wear mourning ornaments, these differing somewhat in different clans, but being, speaking generally, made of rushes or grasses plaited into patterns, the designs of which vary according to the clan and station of the mourners. The ornaments worn by the more distant relatives are collars and bracelets, but nearer relations generally have shoulder and waist belts, the waist belts being, however, only worn by men. This blackening of the bodies and wearing of rush or grass ornaments continues until the removal of the mourning; bathing in the meantime is forbidden, and the relatives are generally also under a food taboo upon some special kind of food or delicacy, one relative perhaps abstaining from a special kind of banana and another from tobacco.¹ This applies also to the nearest relation, whose period of secluded isolation ceases when the blackening of the bodies is commenced. I believe that widows and widowers are the subjects of a special ceremony in lieu of the one described, but I do not know what it is.

When some time—generally ten or twelve months—has elapsed since the last death of a member of a clan, the chiefs of the clan and other clans of the same *ufuapie* group begin to say that the village is cold, that one no longer hears the sound of song and drum, and that it must regain its gaiety, and they therefore decide to hold the feast for terminating the mourning. I do not describe this ceremony,

¹ I cannot say on what basis the sort of food from which the mourner must abstain is determined, and in particular do not know whether the food in question is one of which the deceased was specially fond, as is the case with the optional mourning food taboo of the Mafulu. (See *Mafulu Mountain People of British New Guinea*, p. 247.)

as the account of it given by Dr. Seligmann¹ is substantially the same as that in my notes; but I may say that the necessary village pigs are provided by the relatives of the deceased, and that the rest of the clan by hunting or by purchase procure meat, sometimes more than 100 head of kangaroos, cassowaries and wild pigs being provided.

¹ *The Melanesians of British New Guinea*, p. 359.

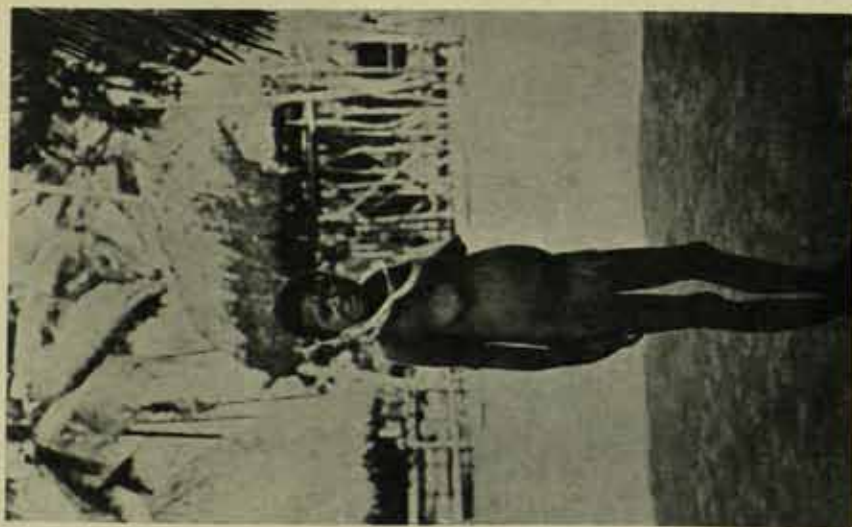


FIG. 1.—WOMAN IN WIDOW'S DRESS.



FIG. 2.—GIRLS IN DANCING DRESS.



FIG. 3.—GIRLS IN DANCING DRESS.

SOME UNRECORDED CUSTOMS OF THE NEREO PEOPLE OF BRITISH NEW GUINEA.



FIG. 3.—A GROUP OF DANCERS.

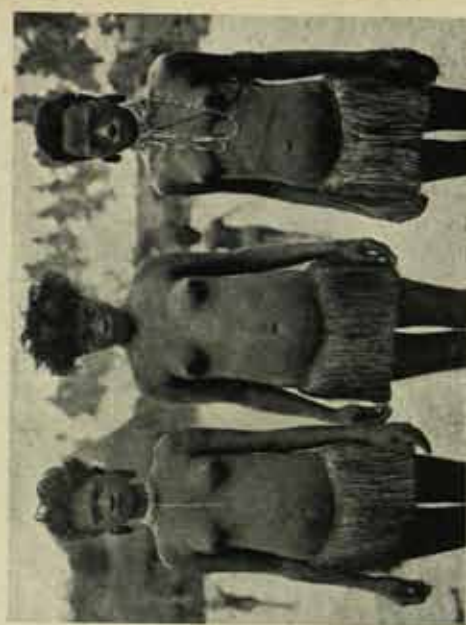


FIG. 4.—GIRLS IN WORKING DRESS (*talia*).

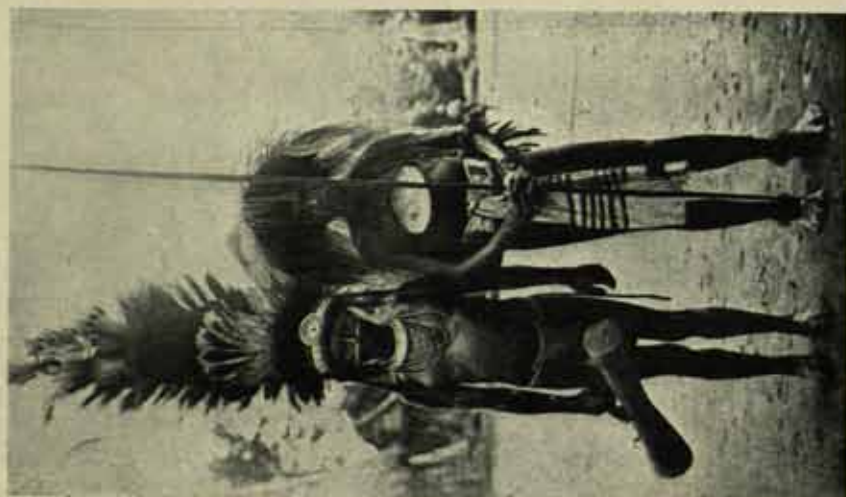


FIG. 1.—MAN WITH DANCING DECORATIONS (*kefe* ORNAMENT OVER FOREHEAD) TO LEFT. MAN WITH WAR DECORATION TO RIGHT.

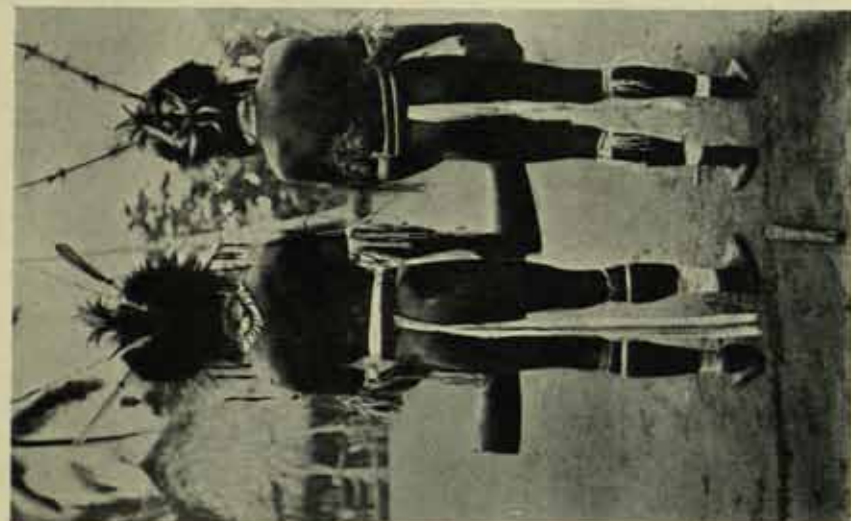


FIG. 2.—MEN WITH DANCING DECORATIONS AND *iöfo* ORNAMENTS ON HEADS.

SOME UNRECORDED CUSTOMS OF THE MEKEO PEOPLE OF BRITISH NEW GUINEA.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

BY HERBERT BASEDOW, M.D., M.A., B.Sc., F.G.S., etc.

WITH PLATES VII-XX.

Local Correspondent of the Royal Anthropological Institute, London, and Honorary Fellow of the Anthropological Society, Göttingen; late Chief Medical Inspector and Chief Protector of Aborigines in the Northern Territory of Australia.

INTRODUCTION.

In August of last year (1911), I visited Bathurst Island to inspect the natives on behalf of the Commonwealth Government. Accompanied by one of my inspectors (Mr. J. H. Kelly) and a crew consisting of a Chinaman, a Manilaman, and three natives of the Larrekiya Tribe,¹ I left Port Darwin at eleven o'clock in the evening and entered Apsley Strait early the next morning. We spent nine days in the examination of the island, entering the numerous salt-water arms and rivers, effecting a landing wherever possible and traversing the island on foot. Landing was, in most places, difficult on account of the thick growth of mangroves that fringes the island on the east. It had been my intention to circumnavigate the island, but a heavy monsoonal gale prevented us from even making the attempt in the small motor-craft at our disposal. I therefore decided to return *via* Apsley Strait and inspect part of Melville Island.

The plates included in this paper are all reproductions of my original photographs and coloured drawings.

Condition of Natives.

I estimate the population of the island to be about 500. Their isolation and, no doubt in a measure also, their reputation as being cannibalistic and treacherous in their habits, have guarded their primitive condition to the present day.² Before

¹ *Vide Trans. Roy. Soc. of S. Australia*, vol. xxxi, 1907, p. 1.

² Compare the statement:—

"Melville Island, about 30 miles north of Port Darwin, is inhabited by a tribe of which very little is known. They do not circumcize, and speak a different language from those on the mainland. They are represented as a very strong and powerful race.

"Before the arrival of the Hon. B. T. Finnis at Escape Cliffs in 1864, the Melville Island natives occasionally visited the mainland for the purpose of stealing lubras, in which they invariably succeeded; but they have not done so since. This tribe is of a very hostile nature, and on several occasions have attacked Europeans visiting the island. Their canoes and weapons are similar to those on the mainland." P. Foelsche: "Notes on the Aborigines of North Australia," *Trans. Roy. Soc. S. Australia*, vol. v, 1882, p. 17.

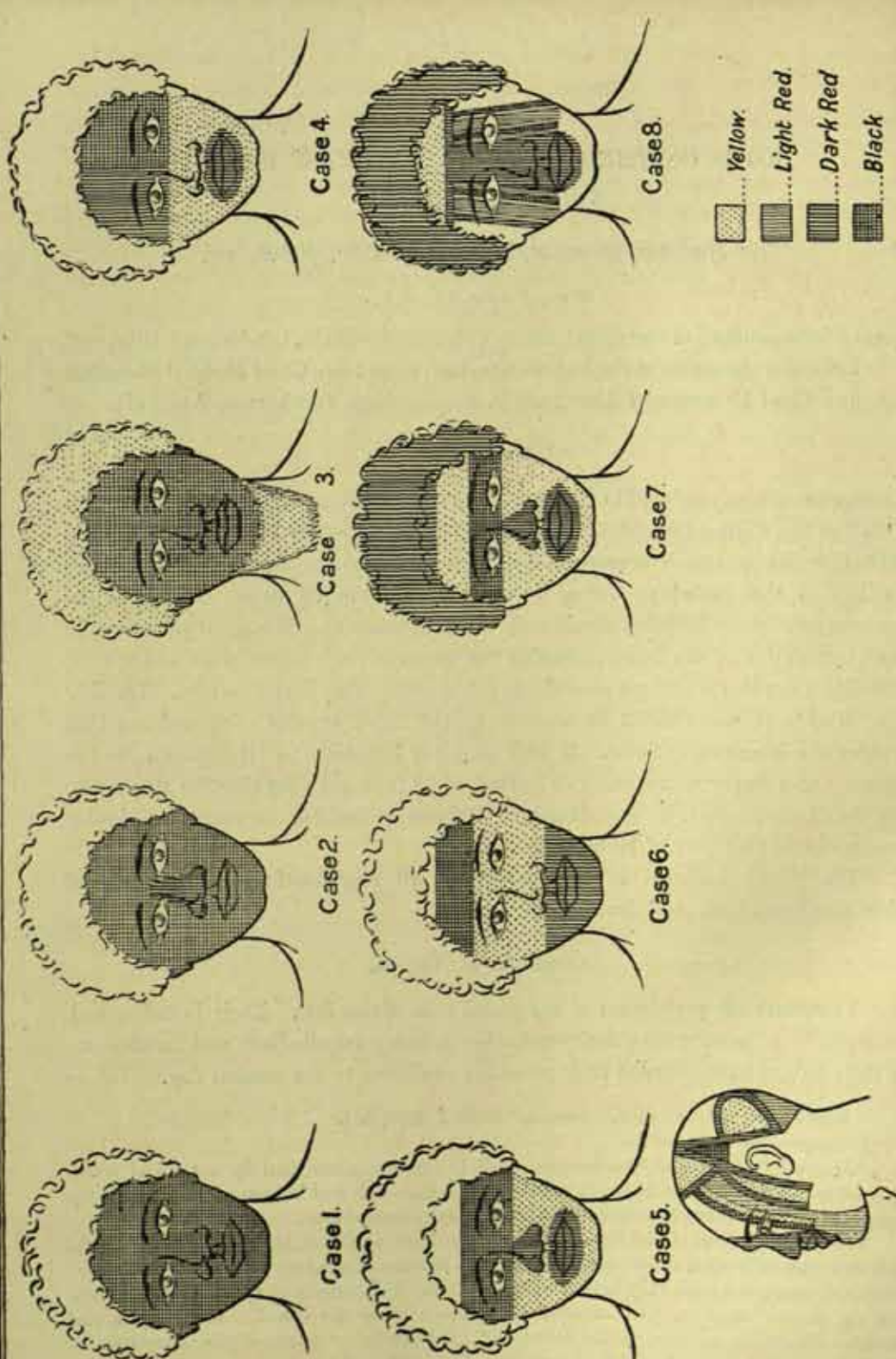


FIG. 1.

the advent of the buffalo-hunters, few white men had visited the islands since the early days of the naval settlement at Fort Dundas, established by Sir Gordon Bremer in 1824, but abandoned four years later. Malays and Japanese pearlers have been in the habit of taking in water from either of the islands and have frequently come into disastrous conflict with the natives. It is perhaps also on account of their isolation from civilization that I found the blacks comparatively free from any serious disease. Apart from the various minor ailments such as traumatic lesions and their after-effects, cataracts and keratitis, a few congenital deformities and such like, only a few cases of tertiary syphilis came under my notice.

A young gin was suffering from a disease of the hip, apparently chronic, but she was too timid to permit me to make an examination. They are on the whole a healthy, sturdy people of moderate stature, with a good muscular development and a square, big thorax. The characteristics are Australoid and yet they present certain insular peculiarities.

The Head.

The forehead is low, with a marked supraorbital development; the face somewhat depressed and the lower jaw strong. The eyes are sunken and the nose is small. The wavy black hair of some of the males was worked up into numerous small, cylindrical, pendant masses with clay and ochre.¹ This, so far as I could ascertain, designated mourning. Others had besmeared their hair with ochre. The hairs on the upper lip are pulled out. The growth of the beard of the men varies, but is, on an average, good.

The natives of either island do not practise the knocking out of one or two incisors as they do on the mainland. Major Campbell,² however, reports having observed the custom on Melville Island.

The face is painted symmetrically with differently coloured ochres, charcoal, and pipeclay, in various degrees of complexity (Fig. 1). A few of the simpler designs might be described briefly:—*Case (1)*: The whole surface of the face blackened with charcoal. *Case (2)*: The nose red and the rest of the face charcoal-black. *Case (3)*: Face (including the shaven upper lip and upper part of chin) charcoal-

¹ Cf. J. MacGillivray, *Narrative Voyage H.M.S. "Rattlesnake,"* London, 1852, vol. ii, p. 13: "The characteristic mode of dressing the hair among the Torres Strait Islanders is to have it twisted up into long pipe-like ringlets, and wigs in imitation of this are also worn"; and again, "at Cape York I have at times for a week together seen all the men and lads with the hair twisted into little strands well daubed over with red ochre and turtle fat."

Also P. P. King, *Survey of the Intertropical Coasts of Australia*, 1837, vol. i, p. 114: "The men were more muscular and better formed than any we have before seen, they were daubed over with a yellow pigment which was the colour of the neighbouring cliff (Luxmore Head on Melville Island); their hair was long and curly and appeared to be clotted with a whitish paint."

² *Journ. Geogr. Society*, London, 1834, vol. iv, p. 153. Cf. also H. Klaatsch: *Rep. Austr. Assoc. Adv. Science*, 1907, vol. xi, p. 591.

black; ears, red; hair and beard on lower part of chin, yellow. *Case (4)*: Lower half of face from below the eyes to the chin, yellow, excepting the lips and the immediate surrounding, which are red; the upper half of face divided vertically in a median line, the left segment being black and the right red. *Case (5)*: A broad, horizontal band of black extends across the forehead and the eyes; beneath this, the whole face is yellow, excepting (as in the previous case) the nose and lips, which are red. *Case (6)*: A broad horizontal band of black across the forehead; beneath this, the whole surface from the eyes to the level of the nostrils, yellow; the remaining portion including the lips and chin, red. *Case (7)*: The crown of the head and hair, red, the forehead yellow; a black horizontal band across the eyes, below which the whole surface is yellow, excepting the nose and lips (as in previous cases), which are red. More complicated patterns are better understood by referring to the sketches.

Body Scars.

A type of cosmetic body-scars is prevalent on the island, which is unique and different from the system found on the mainland. The production of this permanent ornamentation is, as elsewhere, dependent on the formation of an elevated cicatrix. This is done by cutting the skin and artificially inducing a prolific granulation by

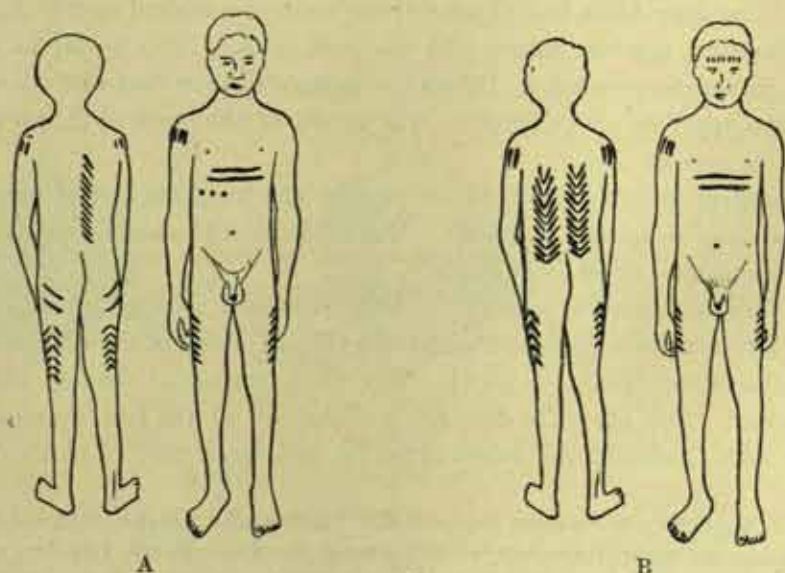


FIG. 2.

keeping the edges of the wound apart with foreign matter, such as ochre and ashes. On the mainland we find such cicatrices in the form of horizontally or vertically disposed parallel ridges on various parts of the body. Although to a small extent such are also found on Bathurst Island, the characteristic pattern there is one made in direct imitation of an object of nature, namely, the frond of the zamia palm (*Cycas media*). The former simple type of cicatrices, consisting of two to five,

or more, parallel ridges, is found first, as vertically disposed ridges, about 10 centimetres in length, on the outer surface of the upper arm, in the region of the deltoid muscle (*vide* Fig. 2, A and B); secondly, as two or three horizontal ridges, about 20 centimetres long, upon the chest and abdomen, either in the epigastrium or immediately below the nipples, or in the umbilical region; thirdly, as two or three ridges, horizontally disposed or slightly inclined from back to front, on the buttocks and outer surface of the thighs (*vide* Fig. 2, A).

Occasionally a horizontal row of short vertical scars is cut upon the forehead immediately above the eyes (*vide* Fig. 2, B); and also an asymmetrical vertical group on the chest or back consisting of a number of parallel scars which slant outwards and downwards from the sternum or spine, respectively (*vide* Fig. 2, A).

The palm-leaf pattern is composed of a series of V-shaped figures, whose angles rest one within the other and point downwards (or upwards as the case may be) and are so disposed as to lie one immediately above or below the other in a vertical line; the enclosing sides standing out as parallel and inclined ridges. The constituent V's are often slightly larger in the centre of the group than at either

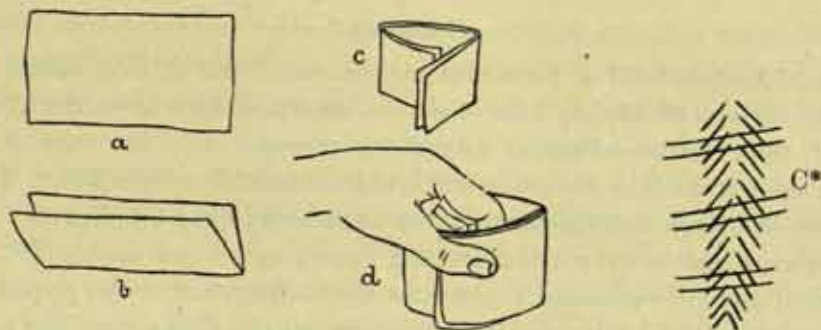


FIG. 3.

end. There is little doubt that the incentive to this design was given by the leaf of the "*Zamia*" (*Cycas media*). The designs, being of different dimensions and of different lengths according to their situation, were observed on the back (on both or either side of the spine) and on the upper and outer surfaces of the arm and thigh (*vide* Plate XVI). The number of the completed palm leaves, in any one particular part of the body, varies. The usual number is from one to three on the arms and thighs, and from two to five, or more, on the back. The design was not noticed on the chest or abdomen. Occasionally a design on the thigh might be seen modified by additional pairs of horizontal scars¹ (*vide* Fig. 3, C*).

¹ I also observed the same "palm-leaf" scars on the chest, back, and arms of Melville Island natives. These natives also paint their faces with ochre; one conspicuous method in use is to paint the hair yellow, the nose red, and to daub the chest yellow over the region of the sternum.

Professor H. Klantsch also noticed some of the scars on the Melville Island natives and stated that "they are totally different from the ornamentations on the mainland. They seem to imitate leaves arranged on a branch; but I make the suggestion that they are connected with the arrangements of the barbs on spears." *Rep. Austr. Assoc. Adv. Science*, 1907, vol. xi, p. 586.

In a few instances, a horizontal row of small circular scars was noticed beneath the cicatrices of the chest, extending from the axillar to the sternal-line, on one half of the body only. They appeared to have been burned into the skin by the heated end of a fire-stick¹ (*vide* Fig. 2, A).

Circumcision not practised.

Circumcision is not, as elsewhere in Australia, one of the attendant mutilations during the ceremonies of initiation, at the age of puberty. No cases were noted either on Bathurst or Melville Island. In this respect the Islanders resemble the fast disappearing Larrekiyas of the Port Darwin district and certain other tribes of Cape York and the adjoining islands.²

The pubic hairs are removed by "pulling them out" with the hand in the same way as the upper lip is cleared of its growth. While standing in conversation, the natives have acquired a peculiar habit of pushing the penis back between the thighs and keeping it from view by crossing one leg over the other.

Habitations.

The islanders build no permanent huts or structures to live under. Apart from the shelters afforded by local or natural conditions, such as overhanging trees, the only form of artificial shelter noticed was prepared from the bark of a tree. A long sheet is cut from the trunk and doubled crosswise at its centre. The two ends are then stuck into the ground at an angle of say forty-five degrees. Similar shelters are found on the north coast and elsewhere on the mainland. In the absence of any more permanent structures, the islanders are, in this respect, not so far advanced as the continental Australian aboriginal. Camp fires are, as usual, much in evidence and kept alight during the whole of the night. Fire-sticks are carried during the day time. Sticks and dry timber, collected to feed the fires, are broken to the required length, not across the knee but over the crown of the head. Small sheets of paper bark (*Melaleuca* sp.) are used as mats to lie on when sleeping or camping.

Personal Wear.

Both male and female walk about in the nude state. The body is anointed with grease and besmeared, in one or more shades of colour, with ochre. The females carry folded sheets of paper bark or large food-carriers about with them, which, upon the approach of strangers, they hold in front of their person.

It is of interest here to note that Captain Matthew Flinders,³ as far back as 1803, made a similar observation on the mainland opposite. He saw a girl at Caledon Bay who "wore a small piece of bark, in guise of a fig leaf, which was the sole approximation to clothing seen."

¹ *Vide* also *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 10.

² *Cf.* J. MacGillivray, *Narrative Voyage H.M.S. "Rattlesnake,"* p. 14.

³ *A Voyage to Terra Australis*, London, 1814, vol. ii, p. 212.

Personal Decoration.

Plaited armlets of vegetable fibre are worn on both arms, by both sexes, young and old. They are made of a number of central spiral turns of fibre, around which a single outer layer of flexible vegetable ribbon is plaited from either side and through the centre. The armlet is usually painted over with yellow ochre and is worn above the elbow.

Corroboree-armlets are constructed in the shape of a flat ring of plaited vegetable fibre, from 10 to 20 centimetres in outside diameter (*vide* Plate XV, Figs. 4 and 6). The ring, which is from 2 to 3 centimetres wide and from a $\frac{1}{2}$ to $\frac{3}{4}$ centimetre thick, is neatly coloured on the outside with ochre in a regular fashion. From a point on the circumference depends a bundle of from seven to fifteen twisted strings of animal or human hair, 30 centimetres long, which ends in a flat oval mass of beeswax, studded on the outside with red seeds of the "gequirity" or so-called "Northern Territory bean" (*Abrus praeatorius*). A similar mass of beeswax and beans surrounds the point of attachment of this tassel.

Special corroboree arm-decorations¹ are constructed on rather more elaborate lines. A piece of bark (*Eucalyptus* sp.), about 66 centimetres long and 10 broad, is bent once upon itself into a simple loop and the open end kept together by stitching the edges for a distance of some 12 centimetres down (*vide* Plate VII, Figs. 2 and 4). The united end is fenestrated; one oblong space (measuring 6 by 2 centimetres) is cut out some 3 centimetres from the top, and beneath this, at a similar distance from its lower edge, two squares, whose sides are equivalent in length to the smaller side of the oblong. The top end of the united portion, and the top and bottom edges of the oblong and squares, are hemmed with an overlapping crossstitch. One side edge only of the loop is hemmed with a simple backward and forward "run-on" stitch. The lateral edges of the windows and the septum between the lower squares are fixed by transverse winding. The material used for hemming and winding is a light cane obtained from a creeping plant. It is evident that the different methods of stitching have to do with the fibrous structure of the bark; the cross-thread would tend to keep the stitches from pulling out along the fibres, as would be the case in straight up-and-down stitching. Additional complexity is given the ornament by eight thin sticks (about 15 centimetres long) which are pointed at both ends. One of these is stuck vertically into the bark at either end of the top edge. Two others pierce the bark at right angles, immediately below the lower outer corner of each square window; one of them being just below that corner of each of the squares, respectively. At either end of these transverse pieces, another stick is fixed vertically by binding with vegetable string, at about 3 centimetres from the ends. The ornament is coloured on the outside with red and white earth-paints. The ground colour of the upper half is red; the hem stitches and the affixed sticks are white. The lower half, or looped portion, bears four white transverse bands

¹ Apparently also used during mourning ceremonies.

bordered with red. Each of the intervening spaces is again sub-divided into two squares at the centre (and a "half-square" at the sides) by three vertical, white lines bordered with red. The squares and "half-squares" are shaded diagonally with from four to six lines passing downwards and away from the central line in the topmost group, and upwards and away from the centre in the two lower groups of squares. The combined effect resembles the windmill or "wanningi" pattern common throughout Australia. The shading is all in white on one side, but red and white in alternate squares on the opposite side.

In another type of this arm decoration, which is also made of bark, the upper united portion is shorter than in the previous case (*vide* Plate VII, Figs. 1 and 3). The top edge is concave and only one oblong window is cut beneath it. The sides have been united by hem-stitching and by the insertion of a few wooden pins which answer the same purpose as rivets. The edges are thickly plastered with beeswax. As in the previous case, the stitches (and the plaster also) are continued only along one side of the loop. A fairly stout rod of wood projects vertically from either end of the top concave edge. Shorter rods project laterally from either top corner of the loop. To the end of each of these rods a plume of white is attached with beeswax. Cockatoo feathers have been chosen and they are fastened by their distal ends so that the fluffy portions are exposed. A number of twisted strands of fur and vegetable fibre pass from the extremity of one horizontal rod diagonally upwards to the base of the vertical rod above, along it to the top, thence horizontally across to the top of the other vertical rod, whence it is continued the same way down the other side to the extremity of the opposite horizontal rod. Beeswax retains these strands in position at the rod-tops, while more strands, wound horizontally from the base of one vertical rod to the other, and also round the base of each, make the former strands secure there. The painted design in this case consists of one large cruciform figure on either side of the looped portion, the arms being modified at the base in a manner suggestive of a snake design. One arm of the cross is white, the other yellow, both being bordered with red. The intervening spaces are shaded red and yellow, the constituent lines being parallel and straight up-and-down in the upper segment and crossed in the lower.

Corrobboree-mask.—An interesting object is what I take to be a corrobboree-mask (*vide* Plate XV, Fig. 5). As I did not see it in use and did not receive the specimen until it was too late to make inquiries, I cannot, with certainty, describe it as such. The object represents an oval structure, 15 centimetres long and 8 wide, which encloses two connected circular rims resembling a solid pair of spectacles. The internal framework is made of split cane, bound together with vegetable strands. The oval portion is covered with human hair string, wound around it and knotted along the outer edge after the modern "button-hole-stitch" fashion. The rims are broad and covered with beeswax. A circle of the red beans of *Abrus praccatorius*, embedded in the wax, surrounds the "eye-holes" on the front side. At one of the lateral extremities, a band of five human hair strings emerges from a cylindrical mass of beeswax and is surrounded, at 6 centimetres distance,

by a similar mass, whence two strings only continue for 40 odd centimetres. The whole length of the band, therefore, amounts to approximately 50 centimetres. Its object is, no doubt, to fasten the mask in position over the face during corroboree ceremonies.

Domestic Utensils.

Food carriers.—The most common form of "mika" or carrier for food and other articles is one made of a single piece of bark of the "stringy bark" eucalypt (*vide* Plate VIII, Figs. 3, 4, 5, and 6). An oblong piece of such bark, say 1 metre long by 40 centimetres broad, is freshly cut and folded transversely at its centre. The edges on either side are pared down, then laid flat, one over the other, and sewn or laced together with plain "run-on" stitches, 2 centimetres apart. A row of slanting and overlapping stitches often skirts the open edge at a short distance down; occasionally, too, part of the edge is cross-hemstitched and plastered with beeswax. The object of this procedure is to prevent the bark from tearing by virtue of its fibrous structure. The open mouth of the carrier is nearly circular or oval; in the latter case the long axis of the oval runs at right angles to the base-edge of the implement. These carriers are of various sizes; the largest that came under observation measured 63 centimetres in height and 43 in width at the base. Ordinarily they are unpainted, but on special occasions elaborate designs, consisting of circles, oblong and other figures, with cross-hatched shading, are drawn on the outer surface in red, yellow, white, and black. The designs are best studied by reference to the reproductions (*vide* Plate VIII, Figs. 5 and 6). Occasionally tassel-shaped appendages are noticed at one of the convex outer surfaces of the mouth of the carrier. These consist of a flattish, egg-shaped mass of beeswax (studded on the surface with the red beans of *Abrus praeatorius*), which is suspended by two twisted fur strings (*vide* Plate VIII, Fig. 6).

Water carriers.—Water is taken to camp from a soakage or spring in simple structures made out of the bark of the paper-bark tree (*Melaleuca* sp.). An oblong piece of this bark is bent upon itself longitudinally, both its ends folded several times and kept together by binding with cane or by spiking with short pointed wooden pegs (*vide* Plate VIII, Figs. 1 and 2).

Drinking vessels.—Several natural objects are used for drinking vessels. Among the most common are the discarded tests of mollusca. The species *Melodiadema* and *Fusus pricei* were found in use at several native wells (*vide* Plate XIV, Figs. 1 and 2).

But when no such shells are available a piece of bark is torn or cut from a tree (usually from a *Melaleuca*) and folded so as to form a water-tight cup (*vide* Plate XIV, Figs. 3 and 4). This piece of bark, which measures about 30 centimetres by 20, is folded longitudinally at about its middle (*vide* Fig. 3, D). Both ends are then bent upon themselves at right angles to this plane and at about one quarter the whole length from either end. The overturned ends and the inner

piece of the former fold are clasped between the fingers and thus used as a cup the part lying opposite to the fingers being held to the lips.

Honey Eating.

In my notes on the north-western tribes of the Northern Territory I have described¹ a honey-collecting implement and there, also, referred to somewhat similar observations made by Dr. Wilson² and Keppel.³

On Bathurst Island I observed still another modification. A young flower-stalk of the fan-palm (*Livistonia humilis*), when about 50 to 70 centimetres long, is cut just above the trunk of the palm and its bottom end chewed until all the fibres are separated and look like the hairs of a brush. The juice, being quite sweet, is swallowed. The brush end is then inserted into the nest of the wild bee (*Trigona* sp.), whereby the honey gathers between the fibres. When saturated with honey, the brush end is passed back to the mouth and again sucked and chewed for a considerable time, after which it is once more returned to the honey for a fresh supply, and this is continued to repletion.

Tree Climbing.

Both male and female, young and old, are expert tree-climbers when in pursuit of game, honey of the wild bee, fruits, and seeds. As none of the trees on the islands grow to an abnormally large size, the butt is usually not too great in circumference to allow of the arms being thrown around it, so that the hands may obtain a firm hold on the side distant from the climber. Having obtained this hold while standing on the ground and facing the tree, the native jumps on to the butt, clutching it with the flat surfaces of his feet in a frog-like fashion. The knees in this position stand well outwards. The body hangs, suspended by the arms above and held against the tree by the legs below. The climber now raises his body; his hands quickly follow by a corresponding distance. Holding on with the latter he draws up his legs in a jumping manner once more to clutch the tree between the soles of his feet. This movement being repeated, he rapidly advances upwards.

Hunting and Fighting.

Throwing-sticks and clubs.—Several types of throwing-sticks and clubs are in use. They must be referred to under this general or collective heading, since it is hard to discriminate between the two implements and to say definitely where the throwing-stick ends and the club begins. They form an interesting group of Australian implements and weapons that allows of a satisfactory system of

¹ *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 26, Fig. 19.

² *Narrative Voyage Round the World*, 1835, p. 99.

³ *A Visit to Indian Archipelago*, 1853, vol. 2, p. 168.

classification on account of the regularity of the various types, not only as regards the actual cutting of the particular form, but also as regards the way in which they are decorated (*vide* Plate IX, Figs. 1, 2, 3, and 4).

Type 1.—The simplest type seen in use is a stick, 46 or 47 centimetres long, usually more or less curved, thin at the hand-end, gradually thickening upwards and swelling to a club-head at the distal end. The surface is longitudinally furrowed, the result of scraping. The stick is painted on special occasions in various colours, as follows: hand-end red or brown (25 cm.), thence successive circular bands of yellow (5 cm.), white (1 cm.), red (25 cm.), black (3 cm.), red (25 cm.), yellow (1 cm.), white (25 cm.), red (4 cm.), yellow (5 cm.); club-head white (*vide* Plate IX, Fig. 1).

Type 2.—The second type to be described is somewhat similar. It measures 60 centimetres in length and is usually straight. Whereas in the previous type the club-head is rounded off at its distal end, it ends with a blunt point in the case now before us. The club-head, too, is larger in proportion. The surface is scraped longitudinally and painted in alternate bands of red and white of different breadths. From the hand-end upwards the coloured bands are as follows: red (19 cm.), white (10 cm.), red (8 cm.), white (23 cm.) (*vide* Plate IX, Fig. 3).

Type 3.—The third type is slender and thickens very gradually from the hand- to the club-end, whence a sharp spine projects for 2 centimetres. It is scraped longitudinally and painted in rather more elaborate fashion than the two foregoing types. The hand-end is red for a distance of about 30 centimetres; thence follow successively bands of yellow (1 cm.), white (6 cm.), red (1 cm.), black (4 cm.), yellow (1 cm.). The club-head is white with two longitudinal yellow bands at opposite extremes of a diameter, dividing it into two halves vertically. Within each of the white fields thus produced are two intersecting, undulating lines, one of red and one of yellow, running longitudinally and terminating in the spine at the top, which is red (*vide* Plate IX, Fig. 2).

Type 4.—This type consists of a stick, circular in section, which increases slightly in diameter from the hand-end upwards, for a distance of 55 centimetres. The diameter at that distance is $3\frac{1}{2}$ centimetres, but immediately beyond, the stick slopes abruptly to a thickness of only $1\frac{1}{2}$ centimetres, whence it tapers to a long pointed end, about 20 centimetres long. The stick is painted in red, yellow, and white, as follows: the hand-end is red for 23 centimetres, thence follow bands of white (1 cm.), yellow (8 cm.), red (1 cm.), white (12 cm.), red (1 cm.), yellow (8 cm.), red (1 cm.). The extreme end of the stick and the long spine are white (*vide* Plate IX, Fig. 4).

The two last-described types have, to my knowledge, not been observed in Australia before.

Spears.

In dealing with the spears used on Bathurst Island (and the same holds good for Melville Island), we are brought into contact with types that are unknown on

the mainland. In the first place no spears are manufactured for projecting by other method than simply by hand. No spear-throwers, so much in evidence among all true Australian tribes, are in use on these islands. Yet light spears were observed which really marked the beginning of the development of the arrow. These were seen to be used by youths at play and during their sham fights. Light green sticks, a little over a metre in length and slightly more than a lead pencil's thickness, are cut and scraped to a simple point at one end. The opposite end, that is, the back- or hand-end, is next put to the mouth and split with the teeth along its fibres into several strips some 10 centimetres long. The split pieces are then bent outwards like the feathers of an arrow and the toy weapon is ready for use. It can be hurled by hand with astounding precision. The opponents evade the missiles by dodging and crouching and contorting their bodies in much the same clever manner as I have described¹ of the Larrekiya and Wogait tribes.

Strictly speaking, one type of spear prevails. It is made of a single piece of solid wood, straightened to a greater or less degree over a fire. It is barbed at the front end and tapers to a simple point behind. The extreme variations in length and, consequently, in weight also, of this spear attract the attention at first sight. It is nothing unusual to find spears measuring 450 centimetres in length and weighing 2,700 grammes, but at the same time the smaller specimens measure only 250 centimetres in length and weigh 370 grammes. When we consider that a fair average length of the Northern Territory spear is 300 centimetres and a good average weight 260 grammes, the maxima of the islanders' spears quoted seem very remarkable indeed. The more do these appeal to us since the largest species of the indigenous fauna is but a fair-sized wallaby. Crocodiles are comparatively scarce, and the buffalo, introduced from Timor by Captain Barlow, first commandant of Fort Dundas, in 1826, is practically unknown on Bathurst Island. On Melville Island, where similar spears are in use, the buffalo is very plentiful, but it is a singular fact that the natives do not hunt this beast to any considerable extent.

The head of the spear has many barbs carved on one side and, occasionally, on two diametrically opposite sides. There are usually from ten to thirty barbs, which are directed backwards (*vide* Plate IX, Fig. 5 (Series)). Behind these there may or may not be from four to eight small serrations that stand out at right angles to the length of the shaft. In other cases, too, some six or more barbs are cut at the back part of the spear-head pointing the opposite way, that is, in the direction the spear is thrown. The spear heads have a long point resembling a cutting-blade or spike. The barbs are symmetrically carved with sharp edges and point. They are flattish lancet-shaped, with a central ridge on the outside, and project from the head to various degrees of prominence in different specimens. Many of the spears are longitudinally grooved with an adze, either for the whole of their length or along the head-end only. They are occasionally coloured and decorated with ochre, some

¹ *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 33.

of the designs being very pleasing to the eye. Some spears, moreover, have human hair strings wound round the shaft, immediately below the head, for a distance of 10 centimetres or more, and this is kept in place with beeswax.

Canoes.

Elsewhere I have referred to the marked absence among the northern Australian tribes of anything but the most primitive crafts and such innovated forms as have resulted from the contact with the white and yellow races. They are, therefore, not to be considered as truly indigenous canoes. On Bathurst Island, however, conditions are different; due, perhaps, in the first place, to its insularity (as well as the numerous estuaries and rivers that cross the land), and, secondly, to the proximity of Melville Island, which is separated from it by only a narrow stretch of calm water known as Apsley Strait. The latter is barely a mile in width at its narrowest points. Numerous canoes are in use within this Strait, and occasionally, when wind and water are favourable, they venture a short distance out to sea. One type is principally in use, namely, a large bark-canoe measuring about 560 centimetres in length (*vide* Plate X, Figs. 1 and 2). It is made of a single sheet of bark, usually from suitable, straight, clear trunks of the woollybutt (*Eucalyptus miniata*) or the stringy-bark (*E. tetradonta*) (*vide* Plate XII, Fig. 1). It is cut from the tree by chopping transversely at the respective distances from the ground, then slitting it once vertically for the whole length and removing it by forcing the edge of the instrument under the bark and finally levering it off with pointed saplings. The outer side of this oblong piece of bark, which is rough, will become the inside surface of the canoe. At a distance of from 65 to 70 centimetres from either end, transverse cuts are made on the inside to a depth of half the thickness of the bark, and such thickness is removed from the whole of the surface lying away from the centre at either incision. Each end is thus reduced by half its original strength and material thereby becoming more pliable. The cutting is done with the sharp edge of a bivalve shell, usually a *Cyrena*. The subtilized ends of the sheet may, or may not, be held over a glowing fire to render them more pliant still. The sheet is folded lengthwise along its middle, and one or both ends kept together by vertical stakes, stuck in the ground and tied together at the top. The bottom corner of the fold is cut away in a very gentle upward slope. The two pieces of the fold are next held firmly together and cut in a more decisive upward direction from a point some 30 to 50 centimetres from the bottom edge end. The two freshly cut edges are neatly sewn with close, overcast stitches, and the same is done along the top horizontal edge for a distance of some 15 or 20 centimetres from the end. From the intervening space between the sewn parts at the top and bottom, an angular or curved segment is cut out in imitation of a fish-tail and its edges laced together in a like manner (*vide* Plate XI, Figs. 1 and 2). The thread used for these "run-on" stitches is in the form of strips from the split sheets of the

climbing palm (*Calamus Australis*).¹ Holes are previously pierced through the bark with an awl, made out of the leg-bone of a wallaby.

The stitches are made more secure and watertight by plastering them with wax from the comb of the wild bee (*Trigona* sp.) or with one of the several resins so extensively used by all natives. The inside corners are caulked with plastic clay and fibre, or resin. Two stays or struts of fairly stout timber, cut to the required length and inserted at the points where the bark was reduced to half its thickness, keep the sides of the canoe apart. From these points, therefore, the sides of the canoe converge to the bow at one end and to the stern at the other; while in between they are more or less parallel. The canoe, if there be any difference at all, is wider aft (74 cm.) than it is nearer the bow (55 cm.); the "fish-tail" incision, too, is acute and deep at the bow and more rounded and shallow at the stern (*vide* Plate XI, Figs. 1 and 2). Along the top, inner, edge of either side of the canoe, a straight strengthening pole is lashed with distant, unequally-spaced and grouped "run on" stitches of cane-strips. These structures lend considerable rigidity to the gunwale of the canoe; they do not extend throughout the whole length, but, being straight, are more or less parallel one to another, and do not enclose the stern or bow. Major Campbell,² in referring to the bark canoes seen by him while at Fort Dundas, states that "the gunwales are strengthened by two small saplings (such as grow in marshy places) fastened together at each end of the canoe." This method is more like that in use on the coast of the Gulf of Carpentaria to-day and was not observed on the islands by me. Long shoots of vines and strips of cane are wound crosswise from side to side of the canoe, and at the same time take in the strengthening-poles along the gunwale. Additional circumferential winding binds the separate cords into one thick rope. Four of such ties are spanned at equal distances, from one side to the other, along the straight edges of the canoe. They not only preserve its shape, but afford a ready means by which the craft may be carried.

The canoe is not decorated in any way, but smears of various colours are noticed both at the bow and the stern, resulting from the handling by fingers previously occupied in decorative work with ochre. When not in use the canoes are "housed" on a level piece of ground, under the overhanging branches of a shady banyan or guttapercha tree. They are laid in normal upright position (not inverted), and are kept so by short supports of timber stemmed against the sides. The bark thus dries in the required shape and does not become lop-sided.

Each canoe has its recognized place. Where a dense growth of mangroves skirts the foreshore, a regular approach to the water is kept clear by cutting away the trees. The paddles are laid within the canoes.

Quite a large number of natives may be carried in a canoe, if the occasion

¹ Compare narrative of Mr. Carron in MacGillivray's *Narrative Voyage H.M.S. "Rattlesnake,"* 1852, vol. ii, pp. 125 and 126; also P. P. King: *Narrative Survey Intertropical Western Coasts of Australia*, London, 1827, vol. i, p. 20.

² *Proc. Roy. Geog. Soc.*, London, vol. iv, 1834, p. 156.

demands it; but usually, when on a simple turtle or dugong hunting expedition, two persons only occupy places in the craft, one near the bow and another near the stern (*vide* Plate X, Figs. 1 and 2). The boatmen, while propelling the craft, squat with their buttocks resting upon the heels and with their knees pressed against the sides. The weight of their body being thus well within the boat, its stability is thereby considerably increased.

Paddles.—Propulsion is effected by means of paddles which are made of hard wood. They have a single well-shaped blade and a rounded handle (*vide* Plate XII, Fig. 2). The edges of the blade are parallel or taper slightly towards the end, which is square or rounded. Apart from the marks left by the tomahawk used in its making, the implement is without ornamentation. In one case only, a circular collar was carved around the handle, immediately above the sloping shoulder of the blade. The longest paddle noted measured 167 centimetres in length, its blade 80; the shortest was 115 centimetres in length and its blade 45. The width of the blades ranges from 7 to 9 centimetres. Both hands clasp the paddle, which is dipped alternately on one side or the other as the occasion and the steering require it.

Balers.—Water that accumulates in the canoe, either by leakage or overwash in a rough sea, is removed by means of a baler which is made out of the melon shell (*Melo diadema*). The columella of the shell is carefully cut away, leaving only the large body-whorl, which is used as a scoop (*vide* Plate XI, Figs. 3 and 4). The outer surface of the shell is painted with red and yellow ochre in large cross pattern, with a fine cross shading.

Dug-outs.—The dug-out canoes to which I have elsewhere referred² have, in all probability, been introduced by Malays from whom the natives obtain them by barter. Dr. Walter Roth has also proved that the dug-outs met with along the coast of Queensland are of Papuan origin. The form observed in Apsley Strait is without outrigger and hollowed out of a single tree trunk. The bow and stern are raised (*vide* Plate X, Fig. 2).

Corroborees.

As with all primitive folk, song and dance constitute the ultimate stage of any social intercourse or festivity. The islanders are even more ready than their brothers on the mainland to resort to this means of entertainment. It thus happened that, wherever we came into contact with the blacks and presented them with divers small articles, a corroboree was immediately inaugurated; even though the encounter happened to occur in the middle of the day. Corroborees on the

¹ Cf. *Narrative Voyage H.M.S. "Rattlesnake,"* vol. ii, p. 17: "the baler (a melon shell) is in constant requisition."

² *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 53. Among others, note that Major Campbell says of the Port Essington natives that "such of the canoes as I saw were hollowed from the trunks of trees, like those of the Malays and were probably either left by these people or stolen from them," *Proc. Roy. Geog. Soc.*, London, vol. iv, 1834, p. 170.

mainland, it will be remembered, are with preference postponed until after night-fall. The women were not permitted to take part in the proceedings, but were, indeed, kept at some considerable distance off. Youths and male children were allowed to join in the ceremonies without apparent restriction. When we met with men, hunting in the bush, and they had been convinced of our *bona fide* intentions, they would approach us in groups of from two to four, and deliver up their long spears to us. Several of the young men would, in the meantime, run into the woods as messengers to summon others who were as yet unaware of the presence of the strangers in their haunts.

A corroboree¹ having been decided upon, the signal or invitation to take part in the event is sounded by two or three of the older men, who have previously arranged it among themselves. This initial note is a long-drawn, continuous yell resembling the German diphthong *ö*! Other members immediately fall in with the same note and are joined, at intervals, by others excitedly rushing up to take their stand alongside of those who started the call. The monosyllabic "*ö*" is kept continuous by the combined efforts of many voices, each of which individually expires for a moment, after the lungs' capacity for air has been completely exhausted. The note is, however, taken up again immediately after a fresh supply of air has been inhaled. The weirdness of the monotone is suddenly broken by the powerful voice of the "master" of the ceremonies, who brings forth a penetrating, but abrupt, order resembling "*wahoi*." This is instantly and collectively repeated by all others present. A momentary silence follows and allows the sombre trunks of the surrounding forest to reiterate the final word in ringing echoes.

The leader once more gives the note; this time in a slightly modified form resembling a long-continued "*ye*," that merges imperceptibly into a "*yi*." A sudden shrill "*wahoi-hoi*" brings that note also to a stop. A deadly silence prevails.

The primary appellation now being over, the performers congregate themselves into a compact group. In the meanwhile much excited vociferation ensues from every mouth, young as well as old. At this stage their eyes make a survey of any neighbouring encampment and if, by chance, a likely performer is noticed who has not heeded the appeal and is shirking his duty by non-attendance, he is furiously implored, at times abusively, to join the assemblage of performers. The leader now emerges from the group at a walking pace and is followed, in single file, by all participants, each in his turn falling into regular order as though his place had previously been allotted to him. The course taken by the leader is a winding one; walking, at first, some distance away from the point of starting but returning eventually thereto. The musical accompaniment is started afresh, and though not exactly melodious to the European ear, it is certainly a remarkably clever and original production on the part of the aboriginal. The nearest way we might describe it in words is that it is in the form of a trill, produced by a rapidly repeated

Compare also H. Kleatsch, *Proc. Austr. Assoc. Adv. Science*, 1907, vol. xi, pp. 589 and 590.

"i, i, i, . . .," changing, it may be, occasionally to a "hi, hi, hi," "That one all-a-same bird," remarked one of my Larrekiya boys, who stood near to me, quite overcome with excitement; and, indeed, I did now recognize the similarity to the trill of the great stone-plover or "curlew" (*Oedicnemus* sp.). The leader having in the interim returned to the starting point and thus completed that part of the performance in which we might be prone to find an analogy with the polonaise of a modern ball, suddenly "doubles" or breaks to a running pace and all the others follow his example. He selects a wide spiral course, gradually nearing the centre and concentrating the body of men to a mass of humanity which to the observer seems to be moving in confusion and disorder. The pace quickens. The men stamp the ground with their feet, at the same time throwing up their arms and keeping them erect from the shoulder. An explosive shriek from the leader is echoed by the voices of all the others. The stamping of feet ceases and the arms of the performers drop to their sides. The leader now steps out to a position in front of his group of men, who, all of them, have turned to face the same way, viz., towards him. Looking to one side and lifting his arm in that direction, the leader emits a high-pitched shriek, which, as his arm is swept downwards on that side, is followed by a combined roaring "hoi" of all the others. This item is repeated several times over; alternately on one side and the other, in succession. This concludes another part of the corroboree.

All performers now form themselves into a semi-circular group. The excitement is intense; forcible argument and debating ensue, accompanied by jocular shouting and laughing, which are repeatedly stimulated by gleeful interjections of "irr," an exclamation common to all Australian tribes.¹

Having come to some different arrangement among themselves, a "tempo" is set by all members clapping either one or both of their hands upon the sides of their thighs, or their buttocks, producing dull and drum-like sounds by the impact. The latter are in marked unison and rhythmical. A performer now jumps from the semicircle of the time-beaters and runs round in a circle, facing its centre, and all the while stamping his feet. The interest and excitement increase among the audience, who further subsidize the accompaniment with a note, that is produced by a spluttering movement of the lips and sounds like "brr, brr, brr." As the stamping of the performer is accelerated, the clapping quickens with it. All at once he throws up his head and shouts "poop." This solicits an immediate response of "iah" from all others present.

Stationing himself in the centre, he next cuts some wonderfully clever and athletic antics. At the start he stamps the ground vigorously with both feet in alternation; the crowd keeping excellent time with their accompaniment of clapping hands upon their buttocks. As his pace increases, the beats of the hands become sharper and both hands are used (usually when striking the buttocks more posteriorly). While he stamps his feet, the performer, at the same time, vibrates

¹ Vide footnotes, H. Basedow, *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 33.

his legs in a remarkable manner; a hyperflexibility in the knee produces, alternately, a temporary valgus- and varus-deformation of the limbs. The arms are thrown straight-outwardly from the shoulders; the hands being dorsally flexed at the wrists. He throws his head from one side to another and occasionally backwards. At times he jumps wildly from one place to another, emitting, with each bound, a loud coarse cry of "poop," which, as before, is followed by a shrill "iah" from all others present. This item being repeated almost to exhaustion, the performer rushes back into the midst of the group while appreciative shrieks of laughter and applause conclude that part.

When the beating of time starts afresh, other performers may repeat the same act and try to excel the performance of their predecessor.

Other items follow, which are imitative in character. A few may be described. It will be understood that the beating of time continues throughout, as do, also, the frequent interjections of "poop" and "iah."

The kangaroo ceremony.—A kangaroo ceremony is started by one or two men jumping into the ring with their legs slightly bent at the knee. Their arms are held forward, bent vertically and at right angles at the elbow, with their hands prone and partly closed. The whole posture is to resemble that of the hopping marsupial of Australia. In jumping round the space, the actor turns his head from side to side, face downwards, as though in search of food. When such is supposed to have been found, his hands may assist to support his body and the hopping ceases. His legs are then bent strongly in the knees, so that his body sinks and the buttocks come to rest immediately above the heels, or, indeed, he may squat entirely upon the ground. Both hands being now placed on the ground between the open thighs, they are held together in the form of a scoop and made to take up a quantity of sand between them. Gently rubbing the hands backwards and forwards they are slowly passed to the level of the mouth and then above it, retaining a horizontal position all the time. This process is repeated several times. Then, at the moment that the sand is dropped to earth, the men rise to their feet with a bound and start running round the ring with the stamping of feet described above and a peculiar hissing noise from their lips. The act is interrupted at frequent intervals by a cry of "poop," which is echoed by the resounding voices of "iah." The hopping recommences. The men occasionally stop and scratch one of their legs with one hand, held in imitation of a claw. Then, while that hand is being held erect, and in a bent position, the opposite hand scratches that limb also. Either arm is now brought into contact with the mouth and licked in precisely the same way as the animals themselves do. The pace of the timekeepers at this stage quickens once more, and the performers furiously scratch all accessible parts of their body with increased zeal. An unexpected cry of "poop," followed by a hearty "iah," terminates this part amid loud shrieks and applause.

It is not long, however, before the two performers again leap into the ring, each armed with a light reed, resembling a spear, in his hand. The above ceremony is partly recapitulated, being, however, slightly modified in that one man, at intervals,

takes the part of a hunter endeavouring to drive his spear into the enraged kangaroo on the opposite side of the ring.

Corroboree of the ship of war.—The next item in the ceremony appeals to us Europeans in a twofold sense. Firstly, the mimicry on the part of the aboriginal in an introduced scene is excellent: its effect being still more enhanced in that his artistic genius has expanded the original impressions by adequate interludes of his own invention and taste. Secondly, the observer's sentiment and appreciation are kindled afresh when he sees this savage folk, who are oft not credited with the possession of anything but vice and immorality, present to a subsequent and younger generation, scenes in living picture, which happened long ago in the days of the naval settlement of Fort Dundas. To us the records are available in the libraries throughout the world; to the aboriginal the events can only be handed down by tradition and such ceremonies as that which is now to be described.

The chorus or semicircular group of men have again started their rhythmical accompaniment by clapping upon the lateral aspect of their thighs with the arched palm of one hand. A performer rushes into the centre of the half-ring and, after going through a few preliminaries, stands with one of his legs placed a short distance in front of the other and slightly flexed at the knee. Throwing his head back and looking upwards, he starts a vigorous hauling action by alternately throwing one arm out in the direction he is looking, closing the fist and making an imaginary pull right down to his loins, while at the same time the opposite arm is thrown out and returned in a similar way. Accurate time is kept by the time-beaters. This act is in imitation of the hauling-in of a sail on a European man-of-war, such as the natives saw at Fort Dundas nearly a century ago. The performer now turns and runs to the opposite corner of the half-ring; the onlookers marking the time by clapping to it in a quickened beat produced with both hands upon their buttocks. The same act is repeated there several times. Next, the same hauling motion is continued, but reversed from below towards the body, in imitation of the hauling-up of an anchor. Several short and harsh interjections suggest the orders of the commanding officers and the whole ceremony, in fact, is reproduced with a suspicion of caricature upon the strictness of naval discipline. During this part of the performance, several cries of "poop" and "iah" are again sounded. The actor now moves about in the semicircle with the familiar stamping of feet and cutting out the most grotesque antics. He first extends his arms straight out on either side, throws his head back and moves his thorax laterally in a pendulous manner from the hips. Then he turns his arms through a right-angle frontwards, so that they project slantingly upwards, whence he again changes them to the former position. Then again he extends his arms downward and bends them so that the elbows project behind and his fists rest against his flanks, from which position they are presently changed to a straight pendulous one. After remaining in that position a short while, he suddenly throws them furiously upwards in front of him; the stamping, which has been

continued all the while, is at this stage strengthened. Any of these acts may be interrupted at any moment by changing to the "hauling of sail or anchor" scene and many interjections of "poop" and "iah" accompany them. The performer himself now ceases to stamp with his feet, but in place thereof he bends his legs at the knees and knocks his thighs together while he extends his arms outwards, either in front or at the side of him.

Corroboree of a fight.—During several of the corroborees described, a chant was heard which accompanied the acting in addition to the clapping of hands against the thighs or buttocks. In trying to reproduce the words or syllables of this chant, the nearest analogy I can find is—

*"Tupera monan la jerra
Tupera monan la jerra,"*

and

"Tupatunan tenakomejona."

These chants are muttered uninterruptedly throughout the particular part. The corroboree of a fight consists in the imitation of a spear duel between two angry blackfellows. They carry the same kind of reed-spears as was described under the "kangaroo ceremony." They first place themselves in defiance of one another at either side of the half-circle and go through all sorts of antics, brandishing their spears, rolling their eyes, and furiously throwing their bodies about. Next they start running about the ring and stamp their feet, throwing up their arms and knocking their thighs together in much the same way as previously described.

Corroboree of the jungle fowl.—After the usual excessive amount of shouting, jabbering, and excited shrieks of laughter, an old man runs forward into the ring. He bends his arms at the elbow and holds them close against the sides of his body, while the closed fists rest on his chest, an attitude resembling that of a professional runner. This is to resemble the wings of the bird (*Leipoa*). He looks about the ground from side to side as though in search of something. Presently he imitates the bird's call with a shrill penetrating voice which sounds like "he-r-r-l." The onlookers' accompaniment consists in producing short spluttering and bubbling noises with their lips that sound like "brrl, brrl, brrl." The performer often interrupts the proceedings by shouting "he," to which all others respond with a loud "yeh." Now he throws up clouds of dust behind him with his feet, in imitation of the way in which the jungle fowl scratch and throw up the earth into the enormous mounds that contain their eggs.

To conclude the ceremony, all performers are led off again by the original leader in Indian file and go through much the same performance as they did in the initiation of the ceremony; the final shouts and shrieks, after the completion of the "trot" in spiral line, being particularly loud and enthusiastic.

Captain King¹ was probably the first white man to have witnessed the

¹ *Survey Intertropical Coasts of Australia*, 1837, vol. i, p. 114.

corroboree of the Melville Islanders, but it appears that he regarded the demonstration as hostile. He writes that "the dance consisted chiefly of the performers leaping two or three times successively out of the sea, and then violently moving their legs so as to agitate the water into a foam for some distance around them, all the time shouting loudly and laughing immoderately; then they would run through the water for eight or ten yards and perform again; and this was repeated over and over as long as the dance lasted."

During none of these ceremonies, or indeed anywhere on the island, did I see anything of totemism in the scientific sense of the word. This fact is in accordance with my observations in Central and North Australia, and my negative evidence is amply borne out by the researches of Drs. W. E. Roth and H. Klaatsch and others.

Pastimes.

The sham-fights of youths with small arrow-shaped spears have already been mentioned. Children were observed upon the beach competing in running and long jump. A favourite amusement of the younger folk on a breezy day is to collect the light globular seed-heads of the "spring rolling grass" (*Spinifex hirsutis*), that grow on every sand-hill near the coast, and take them to the beach and there release them on the hardened sand. Driven along by the wind, these seeds travel over the surface at no mean pace. Allowing them to gain a fair start, the children bolt after them and endeavour to overtake them and pick them up from the ground while dashing past them at full speed in "cow-boy" fashion.

Another game is that of hand-ball. The seeds of the zamia (*Cycas media*) take the place of a small ball. Two lads stand facing one another and hit the seed to and fro with the palms of their hands, after the style of a modern game of tennis.

Despite their keenness of sight and quickness of hand, they are, nevertheless, very backward in catching with their hands an object which is thrown at them.

Burial Method.

The aborigines of Bathurst and Melville Islands have a unique and elaborate method of burial; graves have been found on both islands. It appears that the favourite places for burying the dead are there, where a jungle or mangrove-thicket breaks to the ordinary eucalypt-woodland, usually near to the sea-coast or to a native water.

Historically we have to note several observations in this connection.

Sir Gordon Bremer¹ mentions having discovered a grave on Bathurst Island in 1824. "The situation was one of such perfect retirement and repose that it

¹ *Imperial Parliamentary Paper*, ordered by the House of Commons to be printed, London, March 27th, 1843; also in *The Genesis of Queensland*, by H. S. Russell, Sydney, 1888, p. 34.

displayed considerable feeling in the survivors who placed it there, and the simple order which pervaded the spot would not have disgraced a civilized people. It was an oblong square open at the foot, the remaining end and sides being railed round with trees of 7 feet or 8 feet high, some of which were carved with a stone or shell, and further ornamented by rings of wood, also carved. On the tops of these posts were placed the waddies of the deceased. . . . At the head was placed a piece of a canoe and a spear, and round the grave were several little baskets made of the fan-palm leaf, which, from their small size, we thought had been placed there by the children of the departed. Nothing could exceed the neatness of the whole; the sand and the earth were cleared away from the sides, and not a shrub or weed was suffered to grow within the area."

Major Campbell,¹ who in 1826 relieved Captain Barlow as commandant of Fort Dundas, in his interesting memoir to the Royal Geographical Society also refers to native graves observed by him. He writes: "It appears to be the custom of the natives to bury their dead, their burial places being in retired spots near their most frequented encamping ground. The burial place is circular, probably 10 or 12 feet in diameter; it is surrounded by upright poles, many of which are formed at the top like lances and halberds, 14 or 15 feet high; and between these the spear and waddies (probably of the deceased) are stuck upright in the ground." This description applies equally well to those seen by us, with the exception that the cleared circular space was considerably larger in our case, while the height of the posts, above the ground, was less.

In 1847, Bete Jukes,² naturalist to the expedition of H.M.S. "*Fly*," described and figured a native tomb seen at Port Lihou in Endeavour Strait; "Round a central mound of sand there had been a broad ditch or hollow scooped out and swept quite clean for several yards in width. The mound was of a quadrangular form, 8 feet long, 4 feet wide, and 3 feet high. A stout post stood upright at each corner, and the sides were ornamented by rows of the ribs of the dugong placed regularly along them. . . . On each post was either a large shell or the skull of a dugong, and on the grave were several other dugongs' skulls and shells of the *Nautilus pompilius*. All these, as well as the posts, were smeared with red ochre." Additional interest is attached to the description of Jukes, since he states that "between the two posts, near the sea, a long stick had been inserted, ornamented with feathers and streamers of grass, and fastened to the post by other cross-sticks similarly ornamented." From this wording, and more so from the figure reproduced by him, it would seem that the decoration between the posts was one of those sacred ornaments to which I have elsewhere referred as the *wanningi*.³

¹ *Proc. Roy. Geog. Soc.*, London, 1834, vol. iv, p. 158.

² *Narrative of the Surveying Voyage H.M.S. "Fly,"* vol. i, pp. 149 and 150 (1847).

³ *Vide* also George French Angas, *S. Australia*, illustrated, 1847, Plate XXIV; Edge Partington, *Album III*, Plate CXIV; Spencer and Gillen: *Native Tribes Cent. Australia*, pp. 230 and 231; W. E. Roth, *Ethnological Studies, Queensland Aborigines*, Fig. 427;

A record of something of the kind having existed on the mainland is contained in MacGillivray's narrative (1852). In referring to the burial-ceremonies of natives of the Cobourg Peninsula, this author¹ states that "when decomposition has gone on sufficiently far, the bones are carefully removed, painted red, wrapped up in bark, and carried about with the tribe for some time; after which they are finally deposited, either in a hollow tree or a shallow grave, over which a low mound of earth and stones is raised, occasionally ornamented with posts at the corners."

This same author refers to similar burial ceremonies which he observed of the "Kowraregas," natives inhabiting the Prince of Wales group of islands, situate near Cape York in Torres Strait. He writes² of a grave he saw at Port Lihou, some time after Bete Jukes' visit: "When the head of a family dies at Muralug, the body is laid out upon a framework³ of sticks raised a foot from the ground and is there allowed to rot . . . until the head of the corpse becomes nearly detached by the process of putrefaction, when it is removed and handed over to the custody of the eldest wife. . . . The body, or rather the headless skeleton, is then interred in a shallow grave, over which a mound is raised, ornamented by wooden posts at the corners painted red, with sometimes shells or other decorations attached to them. . . ."

Perhaps it would not be out of place to make a passing reference to the native burial-place discovered by Captain Sturt⁴ near Lake Buddah, off the Macquarie River, in New South Wales (latitude 32° 5', longitude 148° 10'). "It consists of an oblong mound, with three semicircular seats. A walk encompassed the whole from which three others branched off, for a few yards only, into the forest. Several cypresses, overhanging the grave, were fancifully carved on the inner side, and on one the shape of a heart was deeply engraved." A similarity of method will be apparent. Instead of having separate carved posts surrounding the grave, the natives of Macquarie River carved the trees surrounding it. The walk encompassing the mound might be regarded as the equivalent of the cleared space characteristic of the island graves.

Mr. P. Foelsche and I have described painted and ornamented poles that are erected close to the graves of deceased members of the Larrekiya tribe in the Port Darwin district.⁵

During our geological explorations of the north-west coast of the Northern

E. Clement, *Publication of Royal Ethnological Museum at Leiden*, series ii, No. 6 (Catalogue by J. D. E. Schmeltz), vol. xvi, Plate V, Fig. 8; H. Basedow, *Trans. Roy. Soc. S. Australia*, vol. xxviii, 1904, pp. 22 and 28, Plate III, Fig. 4; H. Klaatsch, *Zeitschrift für Ethnologie*, 1906, pp. 792, and 1907, p. 654.

¹ J. MacGillivray, *Narrative of the Voyage of H.M.S. "Rattlesnake," 1852*, vol. i, p. 149.

² *Op. cit.*, vol. ii, p. 32.

³ *Vide* references given by me in *Trans. Roy. Soc. S. Australia*, vol. xxxi, 1907, p. 6.

⁴ *Vide* Charles Sturt: *Two Expeditions into the Interior of Southern Australia*, London, 1834, vol. i, p. 14, and frontispiece.

⁵ *Vide Trans. Roy. Soc. S. Australia*, vol. v, 1882, p. 5, and *op. cit.*, vol. xxxi, 1907, p. 7.

Territory in 1905, Messrs. Brown and Gee¹ found, near Luxmore Head on Melville Island, "a grave enclosed by wooden slabs, portions of which had been burnt. Aboriginal markings were faintly discernible in places on the wood, and some of the posts had the wood cut away at the top, leaving two spike-like horns at the sides; others had the wood cut away from the outside towards the centre, leaving a short spike standing up in the middle of the post."

As I was examining the Rivers' country on the mainland at the time, I did not personally see the find.

Soon after Professor H. Klaatsch, when visiting Melville Island, discovered close to the site of the old naval settlement of Fort Dundas a "grave decorated by monuments." Professor Klaatsch² describes the find as follows: "The grave was surrounded by nine wooden pillars, arranged in an elongated oval, each post differing in size and shape from its fellow. The longest was about 6 feet, and each was variously painted in yellows and reds."

Bremer, Campbell, and Klaatsch found implements and weapons, presumably the belongings of the deceased, lying upon the grave or the grave-posts or stuck upright into the ground. They mention spears, waddies, bark water-vessels and baskets of fan-palm leaves.³ No relics of this kind were noticed by me; in explanation thereof I state that such are likely to be destroyed by the numerous bush-fires occurring on the island, and secondly, in the case presently to be described, on account of the immature age of the individual, since children rarely are in possession of any belongings. I have, however, recorded⁴ a similar custom from Central Australia.

The discovery I am now about to describe was made in the south-eastern corner of Bathurst Island. The grave was situated not far from the coast and on the edge of a eucalypt forest, adjoining a thicket of mangroves (*vide* Plate XIII, Figs. 1 and 2). The space was cleared; a circular patch of ground, 8 metres in diameter, had been artificially elevated by a few centimetres and swept clean.⁵ It was bestrewn with numerous burnt fragments of shells of the edible *Telescopium fuscum* and *Cyrena essingtonensis*, and also with ashes. In the centre of the elevated patch was a small elongated oval mound, which indicated where the corpse had been buried. The direction of its longer axis was north-west by south-east. Five ornamented posts⁶ surrounded the small mound in an irregular way;

¹ *Vide Report on Explorations by Govt. Geologist and Staff*, 1905, p. 28, and *Proc. Austr. Assoc. Adv. Science*, vol. xi, 1907, p. 546.

² *Proc. Austr. Assoc. Adv. Science*, vol. xi, 1907, pp. 586-8, and *Zeitschrift für Ethnologie*, vol. xxxix, 1907, pp. 678 *et seq.*, Plate IX.

³ Cf. H. Basedow, *Proc. Roy. Soc. S. Australia*, vol. xxi, 1907, p. 38, Figs. 40 and 41.

⁴ *Vide Trans. Roy. Soc. S. Australia*, vol. xxviii, 1904, p. 24, Plate VI, Fig. 1.

⁵ Whether this was done to guard the grave-posts against bush fires or to facilitate the detection of an imaginary visit of the evil spirit ("devil devil"), as is the case in Central Australia, or both, is still unsettled.

⁶ Another grave, situated not far from the one under consideration, was surrounded by the remnants of nine posts.

four skirting the north-eastern edge and only one standing on the opposite side, near to the south-eastern end. Before I exhumed the skeleton, the natives informed me that a male infant had been buried there. I am inclined to believe that this information was gathered from the arrangement of the posts and their markings, rather than that they recollected the identity of the child. The grave had apparently stood for some years, for upon digging down to the skeleton, several fair-sized roots of trees, that had grown subsequently, had to be cut through. At a depth of half a metre a layer of decayed pieces of timber, longitudinally laid, was found; under this rested the skeleton. It was, indeed, that of an infant, not many months old. Several men of the local tribe gave me voluntary assistance in the exhumation of the skeleton, and did not in the least object to handle the bones and carry them for me.

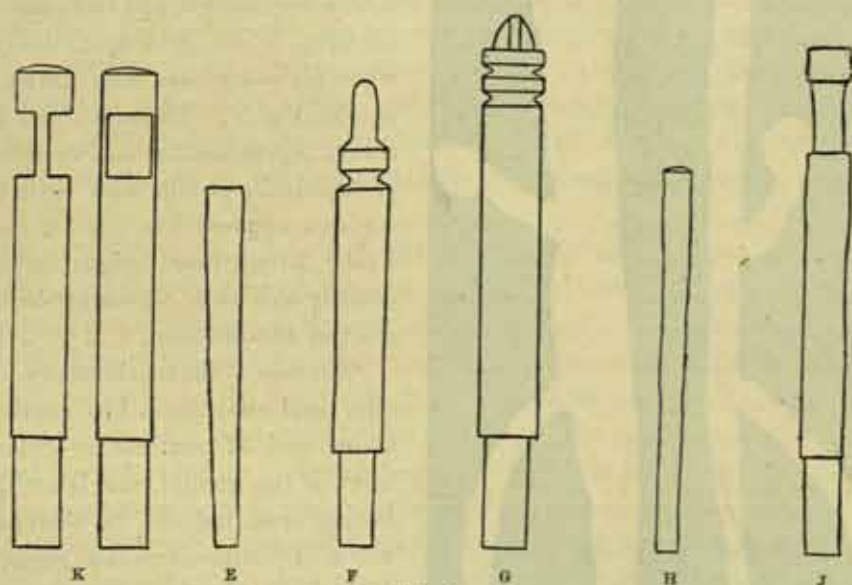


FIG. 4.

The ornamental posts surrounding the little central mound are all of wood, namely the trunks of the heavy iron wood and of a lighter timber (perhaps that of the corkscrew palm or *Pandanus*). They are circular in section and of various diameters and heights. The top ends of the three largest posts are carved in the manner described below. All of them still showed traces of having been painted with ochres in a most elaborate manner. The designs were, however, incomplete, so that I had them freshened up by the natives, who willingly consented to do so and exercised the greatest care to apply the colours in precisely the same positions as they originally occupied. The four posts along the north-eastern edge of the mound stood practically in a straight line, while the remaining one was at the head end of the opposite side. No two of them are alike either in size, method of carving, or colour ornamentation. It is safe to assume that each post has its significance, since the natives could decide the age and sex (and possibly many



FIG. 5.

things more) of the interred and could reproduce the designs, upon request, with so marked a degree of precision and certainty.

The post that stood alone on the south-western side is no doubt of particular importance (*vide* Plate XIV, Fig. 5b). It stood 125 centimetres above the surface and 11 centimetres in the ground. The circumference at the top, which is flat, is 42 centimetres and the post tapers very slightly downwards (*vide* Fig. 4, E). The post shows no signs of any carving. Its surface is, however, charred, and two simple, but effective, if not grotesque, designs in white pipe-clay have been drawn upon it (*vide* Fig. 5). These, without doubt, are in representation of two crocodiles or lizards, in profile, with their dorsal surfaces opposed but not in contact. I take it that these designs, and consequently this post, represent the family crest of the deceased.

The post at the south-eastern corner (the head end) stood 140 centimetres above and 37 centimetres below the level of the ground, the latter length having been reduced in thickness by about 3 centimetres all round (*vide* Plate XIV, Fig. 5a). The top surface is practically flat. For a distance of 22 centimetres down, the wood has been cut away to a depth of from 3 to 4 centimetres all round (*vide* Fig. 4, F). At that distance it slopes outwards through 3 centimetres of vertical measurement to a collar 7 centimetres in width; it being the same diameter as the main pillar. Below the collar, material has again been cut away circumferentially in a V-shaped fashion; the intervening vertical space between the slopes of this notch measuring but

1 centimetre. From this furrow downwards the post has a uniform circumference of 54 centimetres. The colour-ornamentation (*vide* Plate XVII, Fig. 1) is briefly as follows: the portion of post reduced in thickness at the top is yellow for a quarter of its length and red for the remainder. The collar is divided into nine squares, yellow in outline and on a red background. Yellow lines, drawn from corner to corner, intersect at the middle of each square. Below this, the post is divided by five vertical bands. The one that faced the grave is waved: it is drawn in yellow ochre bordered with red. Upon the side diametrically opposite (*i.e.* the side seen on approaching the grave) are two vertical bands of yellow, about 15 centimetres apart. The spaces on either side of them are again subdivided by two slightly curved vertical bands of white, bordered with yellow. Occupying each of the three longitudinal spaces between these white bands are one elongate-oval figure in the centre and one-half such figure at the top and bottom of each respectively. Connected with the top and bottom ends of these figures are singly, doubly or multiply bent processes; the groups being separated from one another by horizontally laid shields. It is clear that these designs are intended to represent human figures in various artistically modified forms. Strange transformations of the limbs into snakes are visible on the left; while similar forms stand alone in the bottom corner of either side.

Such transformations are not infrequently met in primitive art, and from such latitude and privileges on the part of the artist there is no doubt all modern ornamental and emblematical designs have originated. The figures are drawn in red, bordered and shaded with yellow bars and crosses. The central, lowest figure is shaded in imitation of the *zamia* palm leaf, similar to the body ornamentation described above. All the spaces between the limb-like processes are filled in with bunched circlets or simple and criss-cross shading. The last-named method is also found among the designs of mainland natives.¹

Next to this head-post, along the north-western edge of the mound, at a distance of about 65 centimetres from centre to centre of post, stands the largest, heaviest, and most elaborately decorated post (*vide* Plate XIV, Fig. 5c). Its height above ground was 160 centimetres; its total length is 203 centimetres. The circumference is from 62 to 64 centimetres. For a distance of about 12 centimetres from the top, material has been cut away at two sides diametrically opposite, to a depth of from 4 to 5 centimetres, but at the points of emergence of an axis at right angles to this diameter, a vertical strip of timber has been left intact; the top is rounded off in the direction of this axis, which, moreover, ran parallel to the long axis of the mound (*vide* Fig. 4, G). Beneath this headpiece, two such notches, as described of the last-mentioned post, have been cut; the width of the collars so formed and the furrows, respectively, being each from 4 to 5 centimetres. The thickness of the part that stood in the ground has been reduced by from $1\frac{1}{2}$ to 2 centimetres all

¹ *Vide* for example H. Basedow: *Archiv f. Anthrop.*, vol. vii, parts 2 and 3, 1908, p. 219 (Fig.).

round. The ochre ornamentation is in three colours: white, yellow, and red. The design is quite symmetrical as regards the disposition of its constituent parts (*vide* Plate XVIII, Fig. 1). In the centre of the post, on the side away from the grave, stands a figure resembling a St. Andrew's Cross, the arm on the left being yellow, bordered with red, that on the right, white, bordered with yellow. On either side of this figure, and at equal distances from it, are vertical bands of white bordered with yellow; in between are various elongate shield-shaped figures, symmetrically placed and enclosing circles or bars. All the remaining spaces are filled in with cross-hatched shading and circlets in the three specified colours. Between the two upper arms of the cross stands a red T-shaped figure, resembling the emu-track of the mainland tribes, but that it is intended to represent such is doubtful, since the emu (*Dromacius novae hollandiae*) was not observed on either of the islands.

The next post¹ stood 50 centimetres further north-west (*vide* Plate XIV, Fig. 5d). It is the smallest and made of light wood. Its length above ground was 120 centimetres, and the total original length was about 145 centimetres. The last-named measurement could not be taken with accuracy because a dry rot had set in and destroyed part of the timber. The circumference is from 29 centimetres at the top to 26 at the level of the ground. The top surface is rounded off but otherwise the structure is plain (*vide* Fig. 4, H). The colouring (*vide* Plate XVIII, Fig. 2) is as follows: top surface yellow; underneath, for a depth of 10 to 13 centimetres, the post is red, then follow thin alternate horizontal bands of yellow, white and yellow. Below, the surface is subdivided into a number of trapezoid and triangular spaces by two crosses resembling that of the post previously described, the one in white, the other in yellow. Of the intervening spaces, alternate fields are filled in with circlets of red, surrounded by yellow, and arranged in horizontal rows of from one to three, which are separated by horizontal bars of red. The other fields are painted red and are shaded with transverse bands of yellow.

Lastly, the post standing at the foot end of the grave, that is at the north-western corner, was 40 centimetres from the last described. Its total length is 193 centimetres and it stood 156 centimetres above the ground (*vide* Plate XIV, Fig. 5e). The circumference varies from 45 centimetres at the top to 39 centimetres at the ground-level. The top surface is rounded. At a distance of 10 centimetres from the crest, the wood has been cut away circumferentially for a depth of 2 centimetres and a vertical distance of 28 centimetres (*vide* Fig. 4, J). From this level to that of the old ground-line the post is plain, but, below the ground-

¹ The posts surrounding the other grave, mentioned in the footnote on p. 314, were apparently of a similar nature. Bush fires had seriously damaged them. One, however, was cut through at a distance of 15 centimetres from the top, leaving only two narrow strips of timber on either side to support the headpiece thus formed. Whether or not a sexual designation was hereby intended I could not definitely ascertain, but presume so. The "spike-like horns at the side" referred to by Mr. Gee (p. 314 above) must be regarded as the remnants of a post of similar type to this whose crown has been destroyed by fire (*vide* Fig. 4, K).

level, further material has been cut away to reduce its thickness by about 1 centimetre all round. The top portion, which has the appearance of a knob, has been daubed with red ochre; the sunken portion, immediately beneath, is white (*vide* Plate XVII, Fig. 2). The lower surface of the post bears five vertical bands, three being of white pipe-clay and two of yellow ochre. Two of the former have a border of red, the third one of yellow; and both of the latter (yellow) are bordered with white. Three of the intervening spaces are shaded with inclined lines of white, the remaining two are each filled with a vertical row of white cricoid figures. The original surface upon which the pattern was drawn is charred.

Having persuaded the natives to repaint the designs on the tomb-posts, in places where they were defective or missing, they set about the work with enthusiasm and did not rest until they had repainted the whole of the surfaces. To accomplish this they leaned the posts against trees and divided themselves into small groups of two to four, each of which undertook part of the work (*vide* Plate XVI, Figs. 1 and 2). Youths were sent to the main camp, whence they soon after returned with lumps of red and yellow ochre and white pipe-clay (*vide* Plate XV, Fig. 2). From these they broke off small pieces and crushed them by hand in the strong concave shells of the bivalve mollusc *Cyrena essingtonensis*.¹ To this crumbled pigment sufficient water was added to make a thick paint, more water being added from time to time as required. One might look upon these shells containing the mixed paint as representing primitive palettes (*vide* Plate XV, Fig. 1). The paint is applied to the surface by means of crudely made, yet effective, brushes. Short pieces of the creeping calamus are cut with the sharp edge of a shell and one or both of their ends chewed until all the fibres have become separated (*vide* Plate XV, Fig. 3); much in the same way as the flower-stalks of the fan-palm are chewed when feeding on honey (*vide* p. 300). Both of these small artists' requisites are highly interesting inasmuch as they show us a decidedly primitive, yet to the present day practically unaltered stage in the evolution of art.

It is evident that the posts have been cut and carved with a sharp bladed instrument, in all probability a tomahawk. Captain Flinders² as far back as 1803 noticed that the natives on the north coast (Caledon Bay) were familiar with the use of iron instruments and that they tried to steal his axes. He, therefore, suspected that "they had been previously visited by people possessing iron instruments." Later, he was himself able to confirm this supposition when he discovered, near to Cape Wilberforce, a fleet of proas from Macassar, the crew of which were in the habit of visiting the north coast of Australia to collect trepang, which they took to Timor and sold to the Chinese.³

¹ We have before us an interesting analogy, when we recollect that in our own country the shells of fresh-water mussels were, in former days, much used and are still used as a receptacle for mixing water-colours; whence also the name *Unio pictorum*.

² *A Voyage to Terra Australis*, London, 1814, vol. ii, pp. 213 and 228-231.

When Captain King¹ dropped anchor in Apsley Strait in 1818, and came into contact with natives near Luxmore Head on Melville Island, he noticed that "they repeatedly asked for axes by imitating the action of chopping."

Ethnologically these tomb-posts are of the greatest importance. With the exception of the records left by Jukes and MacGillivray, we know of nothing of the kind existing nowadays on the mainland. That, however, the inhabitants of some of the Torres Strait islands adopt methods of preserving the memory of their dead by means of painted and decorated structures of a different type is an established fact. The Continental Australian certainly, also, has methods of his own to mark a place of burial, but in a decidedly more transitory and less laborious way. The latter leaves already existing belongings of the deceased upon the grave; the islander, in addition, surrounds the spot with specially prepared posts such as have been described herein. Apart from the carvings, the painted designs, alone, are quite superior to anything existing on the mainland. The marked symmetry of the individual patterns and their diversity, when compared with one another, can hardly find a parallel on the mainland. We might look upon these island productions as representing interesting and independent transition stages between the primitive art of the Continental Australian, on the one hand, and the more perfected types of equatorial island tribes to the north of Australia, on the other.

APPENDIX.

NATIVE OCHRE DRAWINGS ON BARK FROM MELVILLE ISLAND, NORTHERN TERRITORY OF AUSTRALIA.

While visiting Bathurst Island in 1911, I also entered several of the inlets of Melville Island from Apsley Strait. At one point, not far from the southern entrance to the Strait, where some aborigines were living in huts near to Cooper's Buffalo-Shooters Camp, I found the drawings here described. They were upon sheets of bark of the Woollybutt (*Eucalyptus miniata*), used for building their shelters and huts. All drawings are in pipe-clay and red ochre; these materials having been smeared or squirted on to the bark in the form of a thin paste or in aqueous suspension. Typical among the drawings of the aborigines on the mainland are the negative imprints of hands produced by holding the palm of the hand flat against the surface and squirting a mouthful of pipe-clay or ochre, suspended in water, against the back of the hand and around it. The surrounding surface is thus coloured so that, when the hand is removed, its outline stands out conspicuously by the absence of colour.²

¹ *Survey of the Intertropical Coasts of Australia*, 1837, vol. i, pp. 111 and 121.

² *Vide Trans. Roy. Soc. S. Australia*, 1907, vol. xxxi, p. 56, Plate XII. Among other references note E. Giles, *Australia Twice Traversed*, 1889, vol. i, p. 78. "The drawing is done

The first plate reproduced contains a group composed of five imprints of the left hand of a native (Plate XIX, Fig. 1). The fingers are wide apart; the wrists of the two lowest hands seem very narrow in proportion, but that is due to the fact that they did not lie in close contact with the surface when the pigment was squirted against it.

In the lower corner on the right of the reproduction stands a single-masted sailing craft, intended to represent a small European pearling or fishing-boat. The former class of boats have long been in the habit of passing through Apsley Strait on account of the shelter afforded and the chances of procuring fresh water close to the shores of either island.

Plate XIX, Fig. 2, is the lower continuation of the proceeding. The sailing craft just described is noticed on the right. Below it is the picture of a frog. Special features of this design are firstly the two circular lateral prominences on the head representing the large eyes and, secondly, the inaccuracy in regard to the number of toes. The smear on the left hind leg, resembling a caudal appendage, is accidental.

The fourth design (Plate XX) is that of a double-masted pearling-lugger¹ in full sail. The proportion and neatness of execution of these designs of sailing crafts are excellent indeed. The hull and sails of the latter figure are drawn in white pipe-clay and its masts in red ochre.

DESCRIPTION OF PLATES.

PLATE VII.

Figs. 1 and 3. Front and side view of arm decoration, made of bark, coloured with ochre and ornamented with fur strings and cockatoo feathers. $\frac{1}{2}$ natural size.

Figs. 2 and 4. Front and side view of arm decoration, made of bark, coloured with ochre and ornamented with pointed sticks. $\frac{1}{2}$ natural size.

PLATE VIII.

Figs. 1 and 2. Water-carriers, made of paper-bark (*Melaleuca*). $\frac{1}{2}$ natural size.

Figs. 3, 4, 5 and 6. Food-carriers, made of bark; Figs. 5 and 6 with ochre drawings. $\frac{1}{2}$ natural size.

PLATE IX.

Figs. 1, 2, 3 and 4. Throwing-sticks and clubs. $\frac{1}{2}$ natural size.

Fig. 5. A collection of spears from Bathurst Island. $\frac{1}{12}$ natural size.

by filling the mouth with charcoal powder if the device is to be black, if red with red ochre powder, damping the wall where the mark is to be left, and placing the palm of the hand against it, with fingers stretched out; the charcoal or ochre powder is then blown against the back of the hand; when it is withdrawn, it leaves the space occupied by the hand and fingers clean while the surrounding portions of the wall are all black or red, as the case may be." (Central Australian Natives.)

¹ Vide figure in *Report Government Geologist and Staff*, 1905, Adelaide, By authority, p. 14.

PLATE X.

Fig. 1. "Fish-tail" bark canoes, Apsley Strait.

Fig. 2. "Fish-tail" bark canoes and "dug-out" canoe in the distance, Apsley Strait. Melville Island in the background.

PLATE XI.

Figs. 1 and 2. Bow and stern of "fish-tail" bark canoe. $\frac{1}{10}$ natural size.

Figs. 3 and 4. Balers made out of the melon shell. Fig. 3 shows the painted decoration of the outer surface; while in Fig. 4 it is seen how the columella of the shell has been removed with a sharp cutting instrument. $\frac{1}{4}$ natural size.

PLATE XII.

Fig. 1. Forest scene on Bathurst Island. From the stringy-barked eucalyptus on the left side of the picture, the bark has been removed for the purpose of making a canoe. Another tree, which has been similarly treated, is seen in the background, near the centre of the picture. In the foreground note a tall specimen of the zamia-palm (*Cycas media*).

Fig. 2. Various types of paddles in use on Bathurst Island. About $\frac{1}{10}$ natural size.

PLATE XIII.

Figs. 1 and 2. Distant and near view of a native grave, surrounded by five carved and painted posts, Bathurst Island. Note the cleared space and the position of grave, viz.: at the junction between open woodland and thicket. A tall Bathurst Islander is seen in Fig. 2.

PLATE XIV.

Fig. 1. A melon-shell (*Melo diadema*) used as a drinking vessel. $\frac{1}{4}$ natural size.

Fig. 2. A *Fusus pricei* used as a drinking vessel. $\frac{1}{4}$ natural size.

Figs. 3 and 4. Drinking cups made out of folded sheets of paper-bark (*Melaleuca*). $\frac{1}{4}$ natural size.

Figs. 5a, 5b, 5c, 5d, 5e. Painted and carved posts of native grave shown in previous plate. $\frac{1}{4}$ natural size.

PLATE XV.

Fig. 1. A series of four shells of the *Cyrenx essingtonensis* which have been used for holding red, white and yellow earth-pigments to mix with water as required. $\frac{1}{4}$ natural size.

Fig. 2. Lumps of yellow ochre (on the left), white pipe-clay (in the centre), and red ochre (on the right), used in the decoration of the grave posts shown in previous plate. $\frac{1}{4}$ natural size.

Fig. 3. Primitive paint brushes made by macerating the ends of short pieces of the shoots of the climbing palm (*Calamus Australis*). $\frac{1}{4}$ natural size.

Figs. 4 and 6. Special corroboree arm-rings. $\frac{1}{4}$ natural size.

Fig. 5. A corroboree mask (?). $\frac{1}{4}$ natural size.

PLATE XVI.

Figs. 1 and 2. Bathurst Island natives painting grave-posts. Note the cosmetic body-scars in imitation of the leaf of the zamia palm (*Cycas media*).

PLATE XVII.

Fig. 1. Coloured ornament of grave-post No. 5a (Plate VIII) shown in plan; modified forms of the human figure are embodied.

Fig. 2. Coloured ornament of grave-post No. 5e (Plate VIII) shown in plan.

PLATE XVIII.

Fig. 1. Coloured ornament of grave-post No. 5c (Plate VIII) shown in plan.

Fig. 2. Coloured ornament of grave-post No. 5d (Plate VIII) shown in plan.

PLATE XIX.

Pipe-clay drawings on a sheet of bark of the stringy-barked eucalyptus (*E. tetradonta*), from a native hut on Melville Island. The plate includes negative imprints of hands (Fig. 1), and drawings of a sailing craft (Figs. 1 and 2), and of a frog (Fig. 2).
 $\frac{1}{2}$ natural size.

PLATE XX.

Pipe-clay drawing of pearling lugger in full sail; bark from a native hut on Melville Island.
About $\frac{1}{2}$ natural size.



1



2

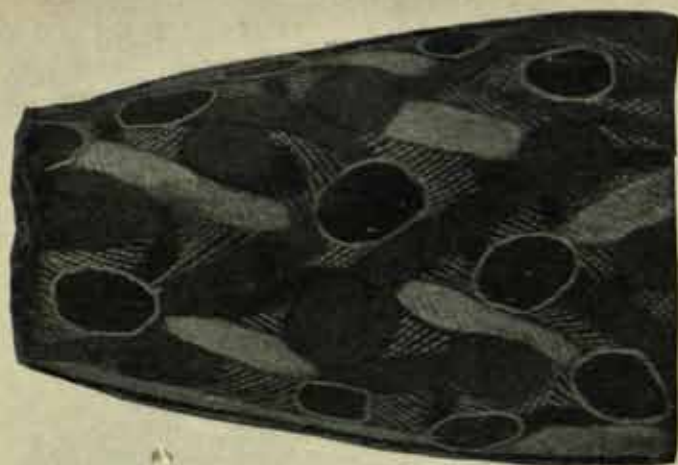


3



4

5.



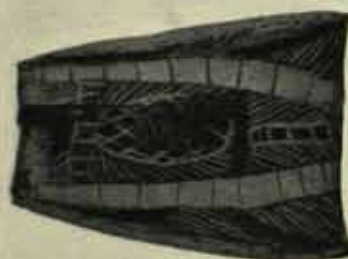
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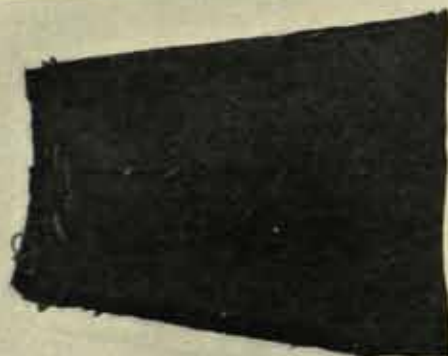
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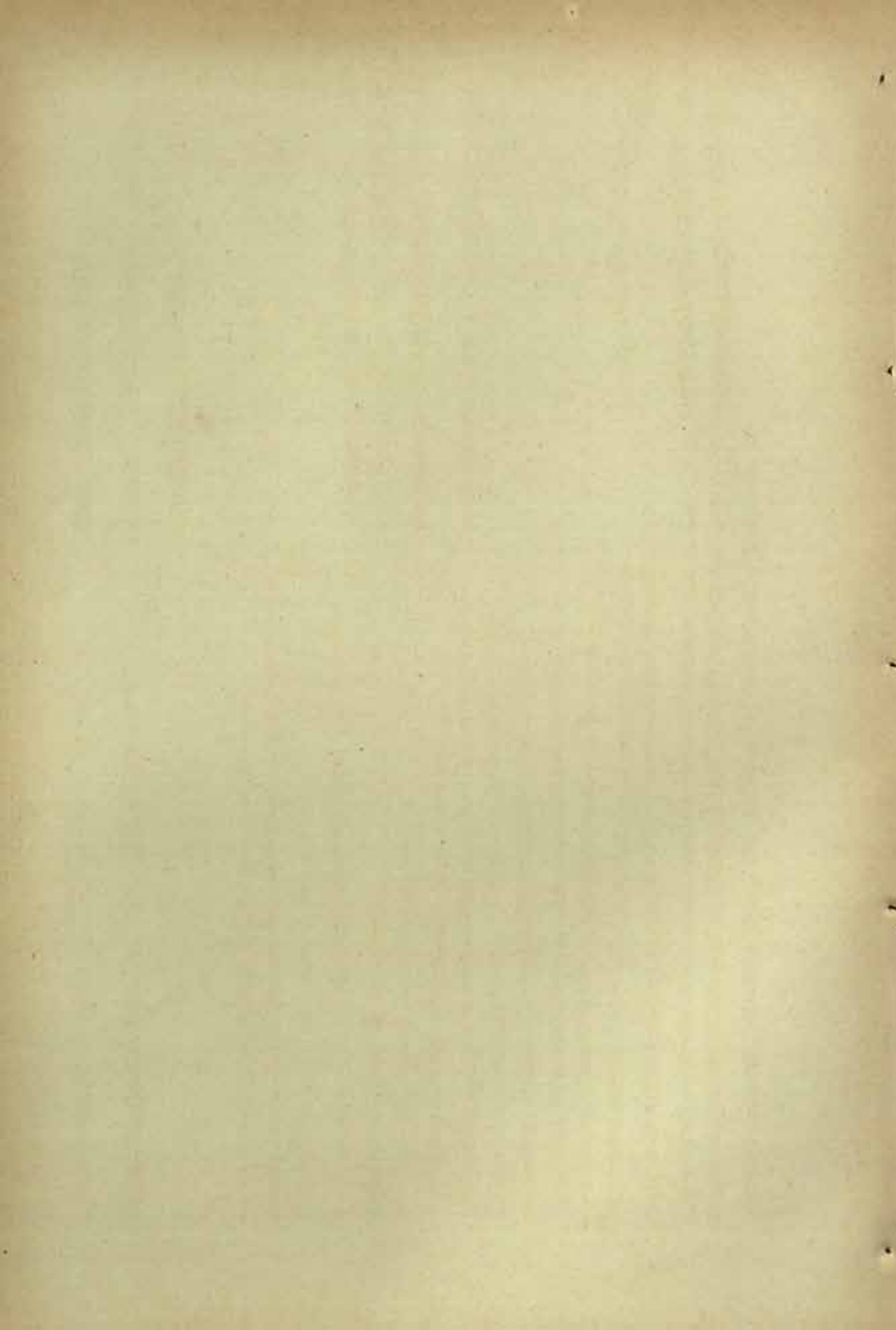


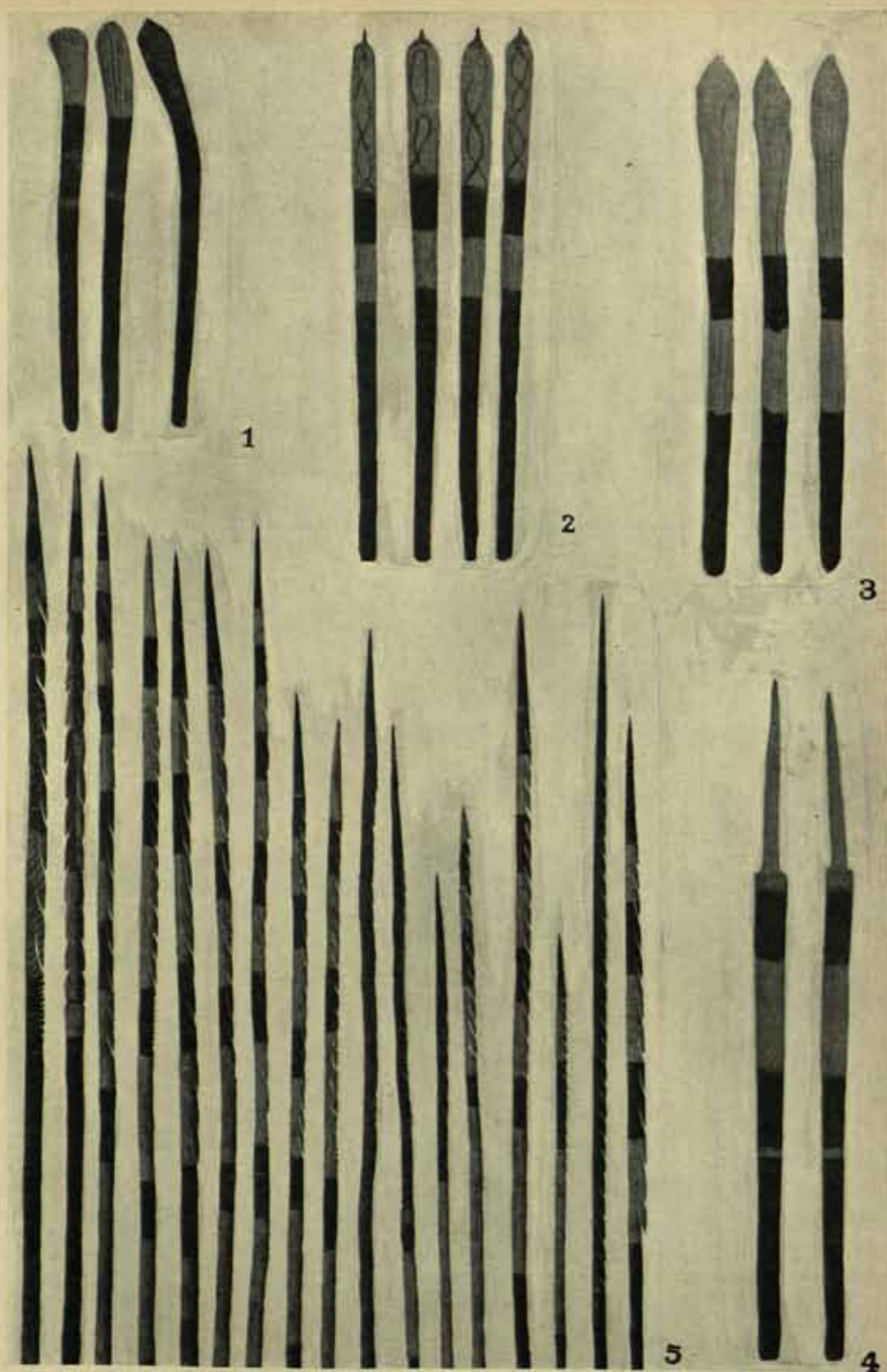
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2.







NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

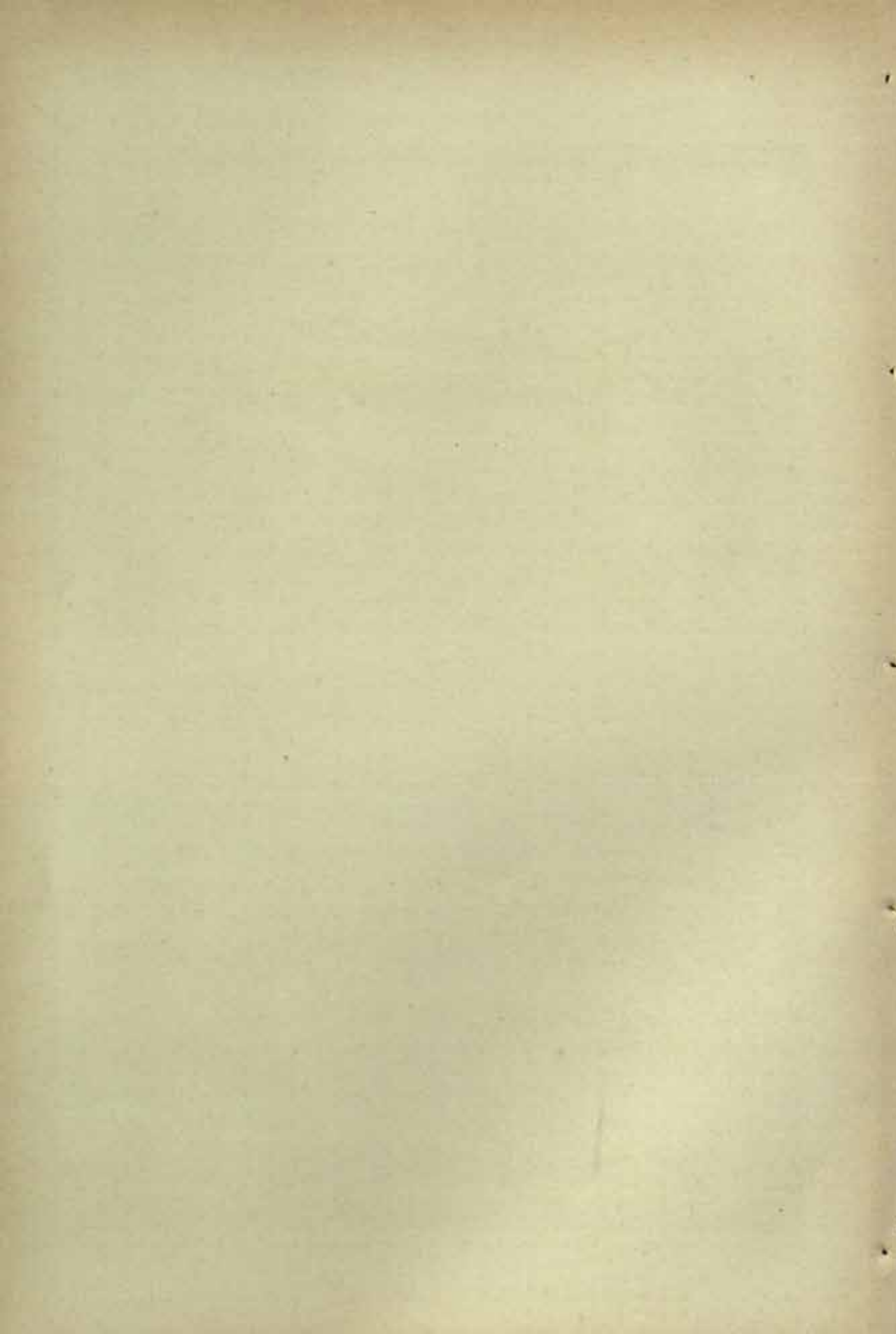


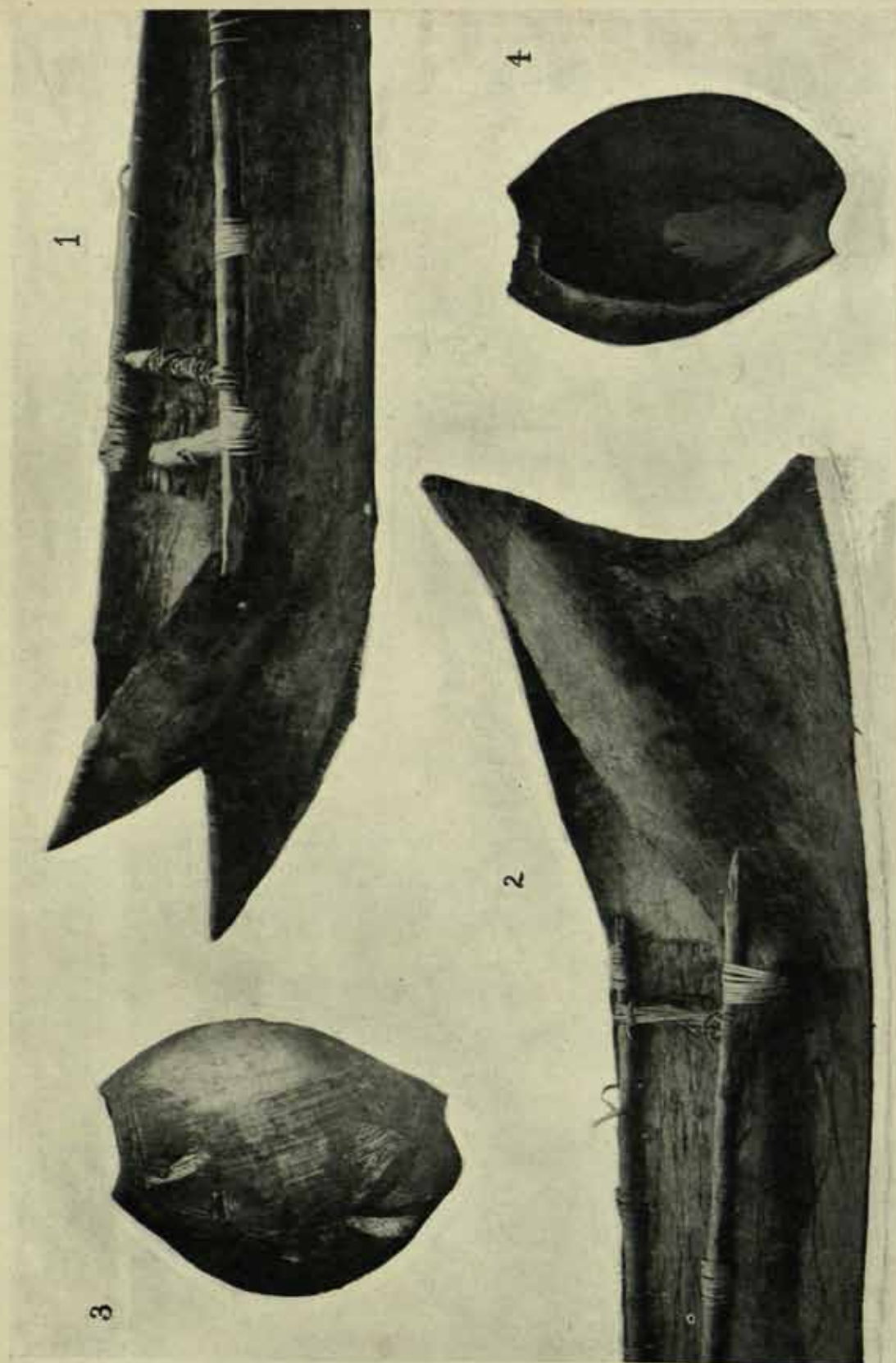


FIG. 1.



FIG. 2.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.



NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

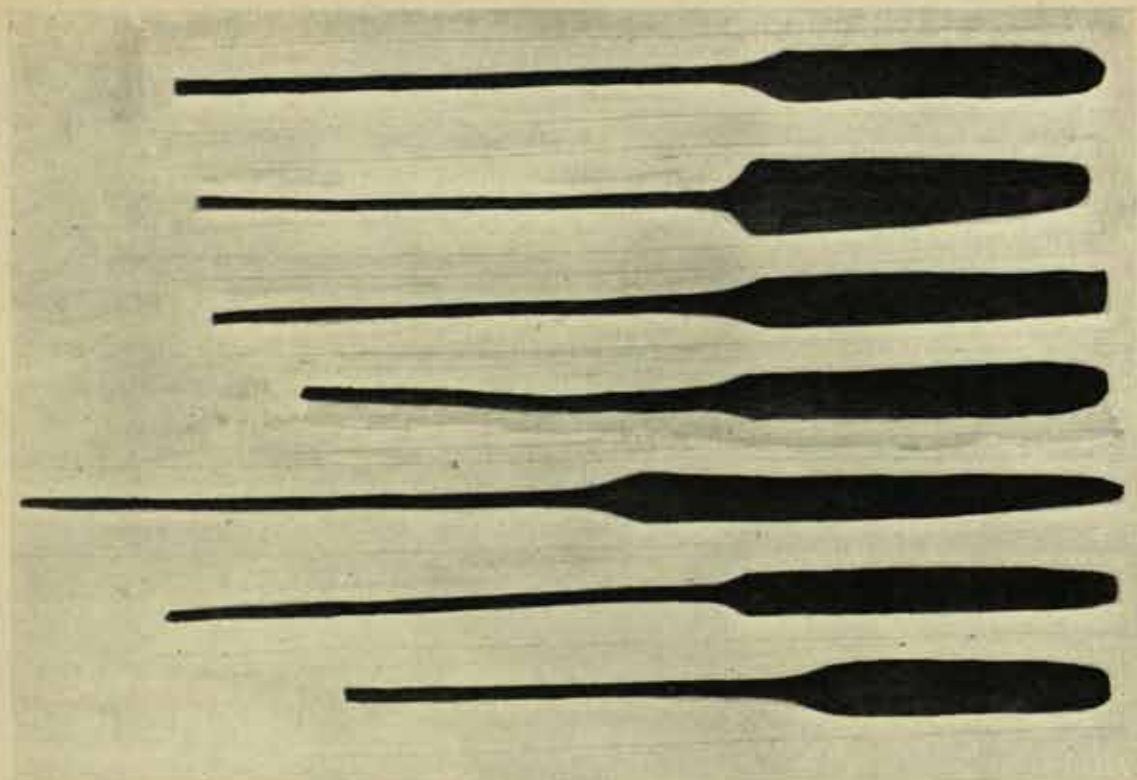


FIG. 2.

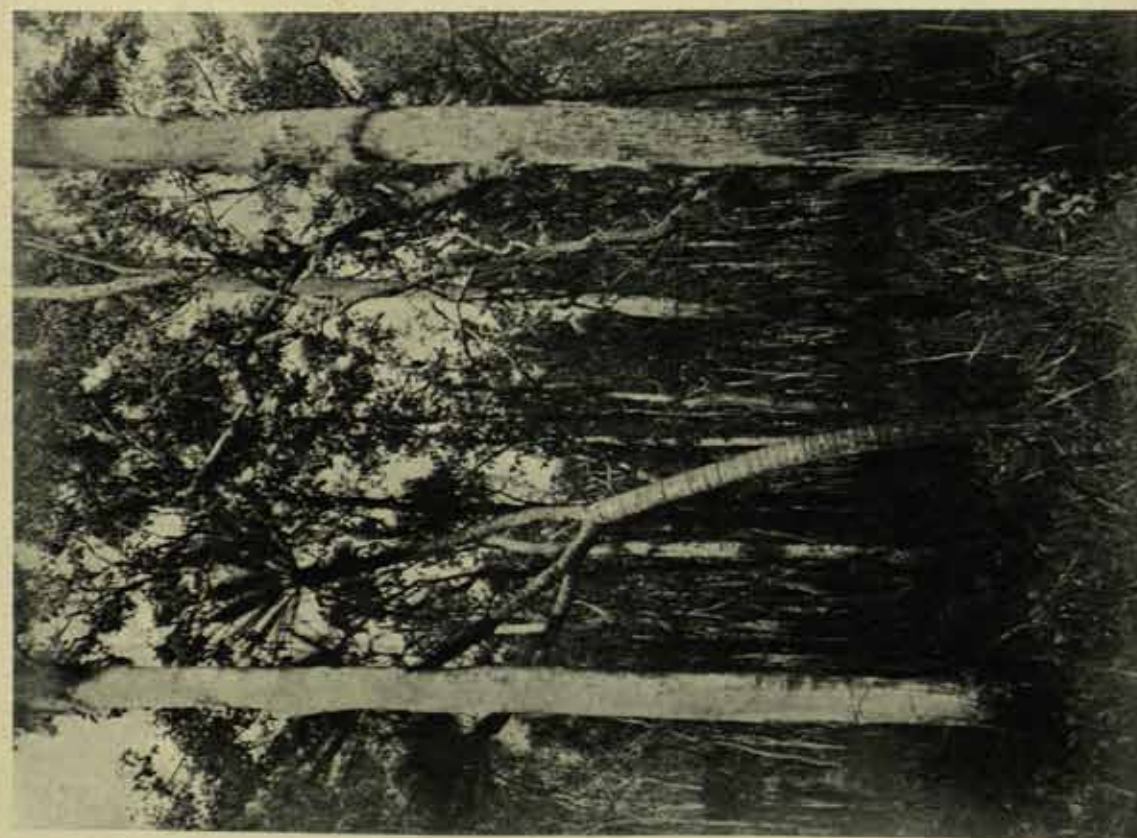


FIG. 1.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

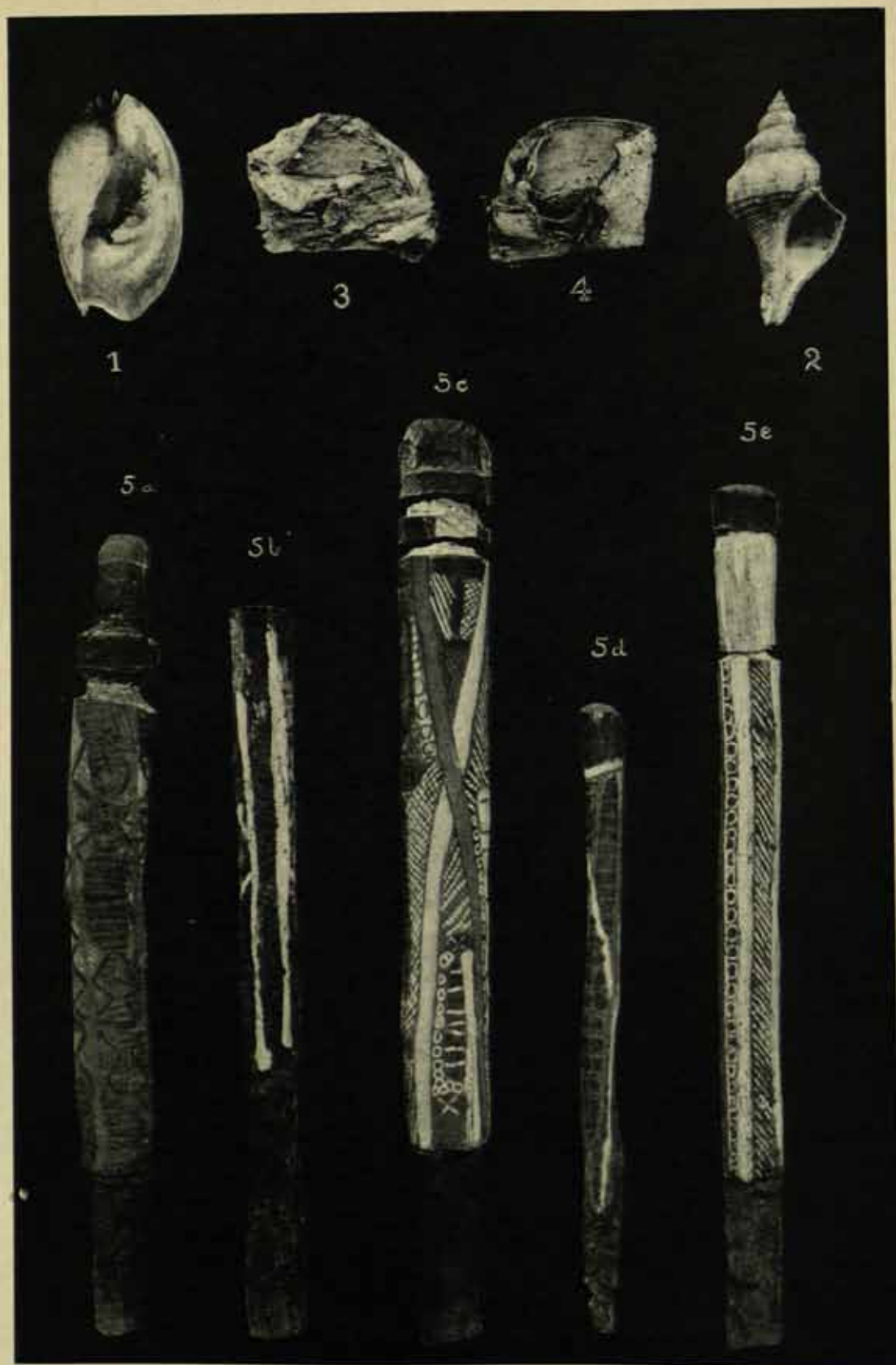


FIG. 1.

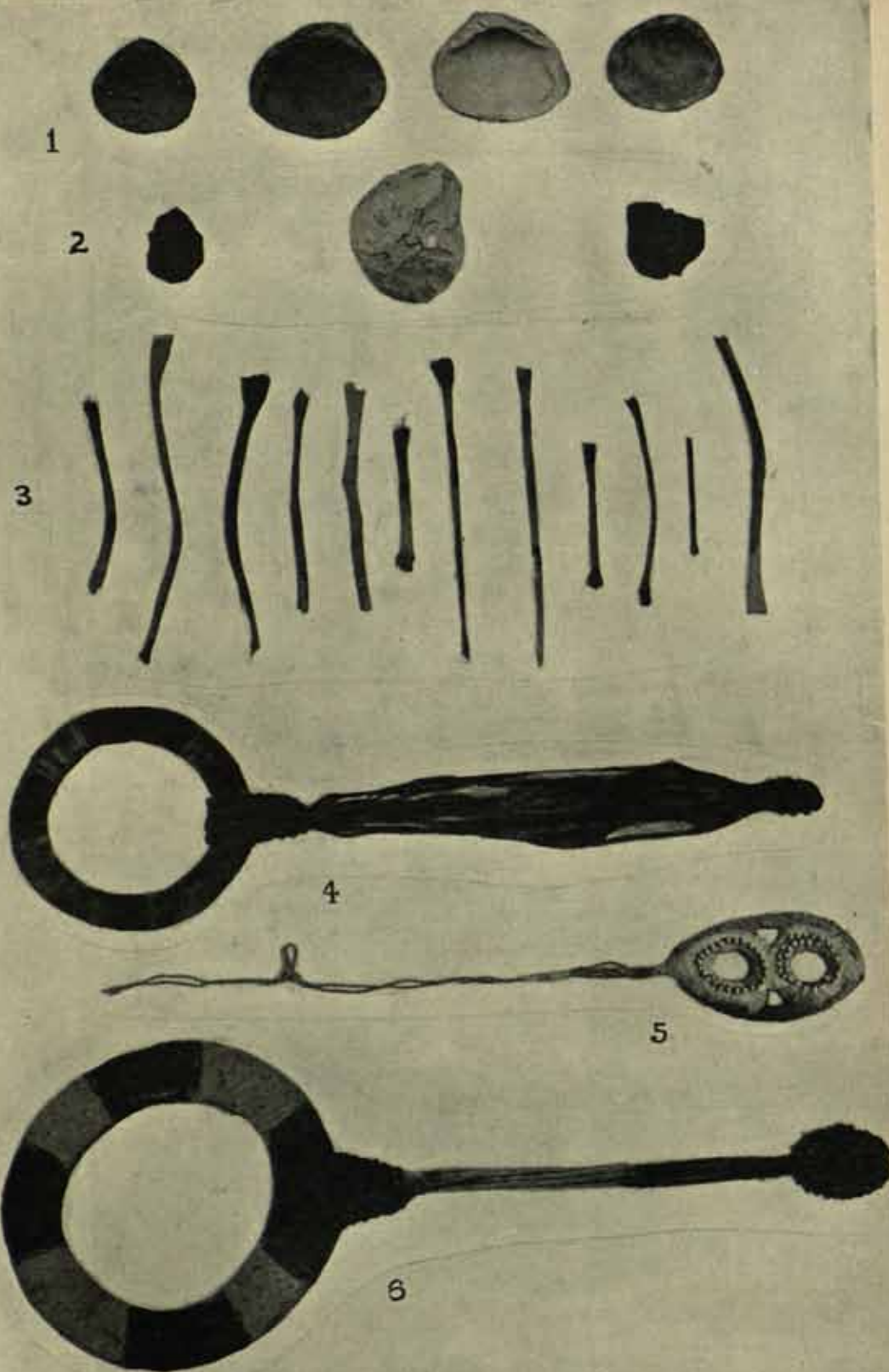


FIG. 2.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.



NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.



NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

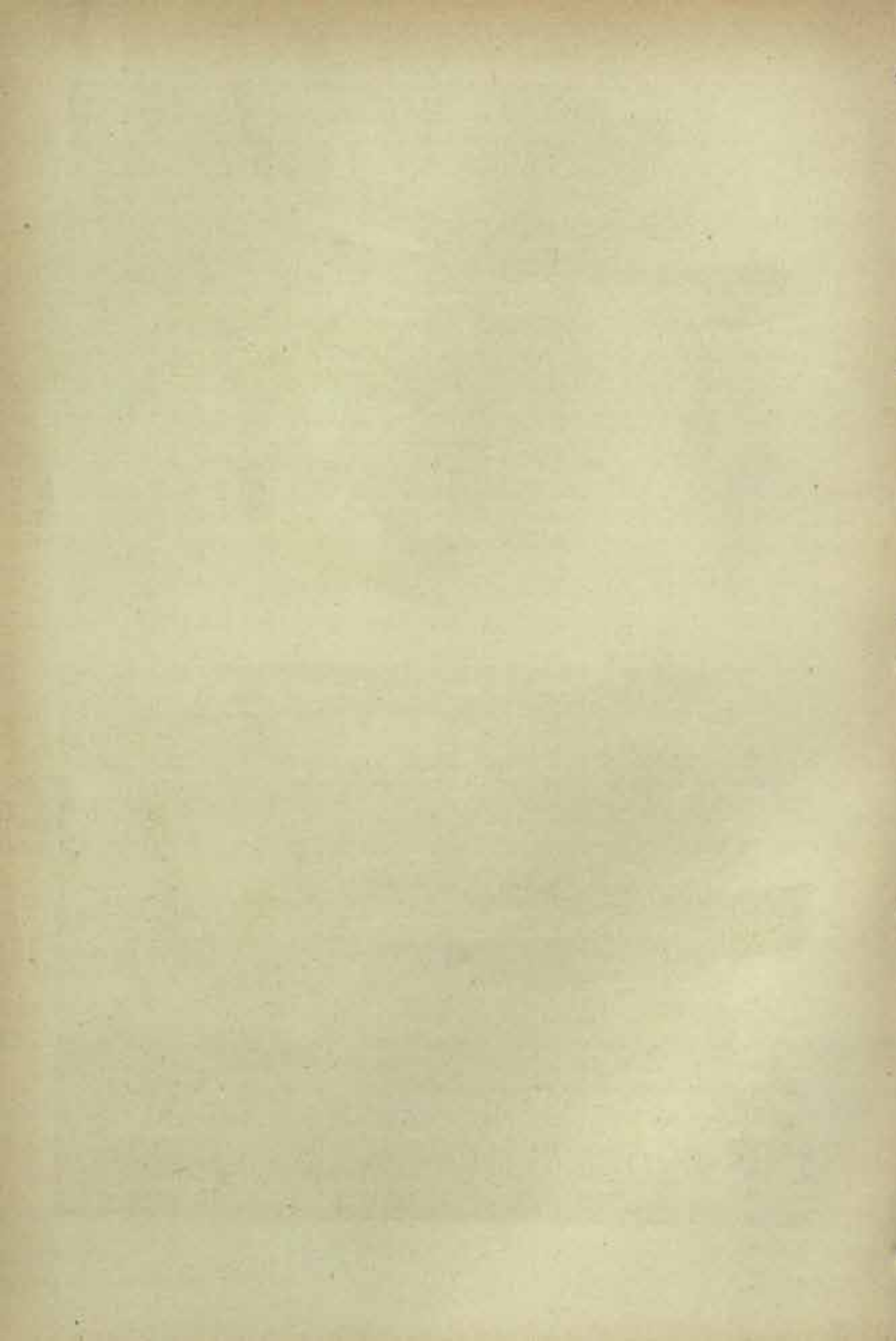


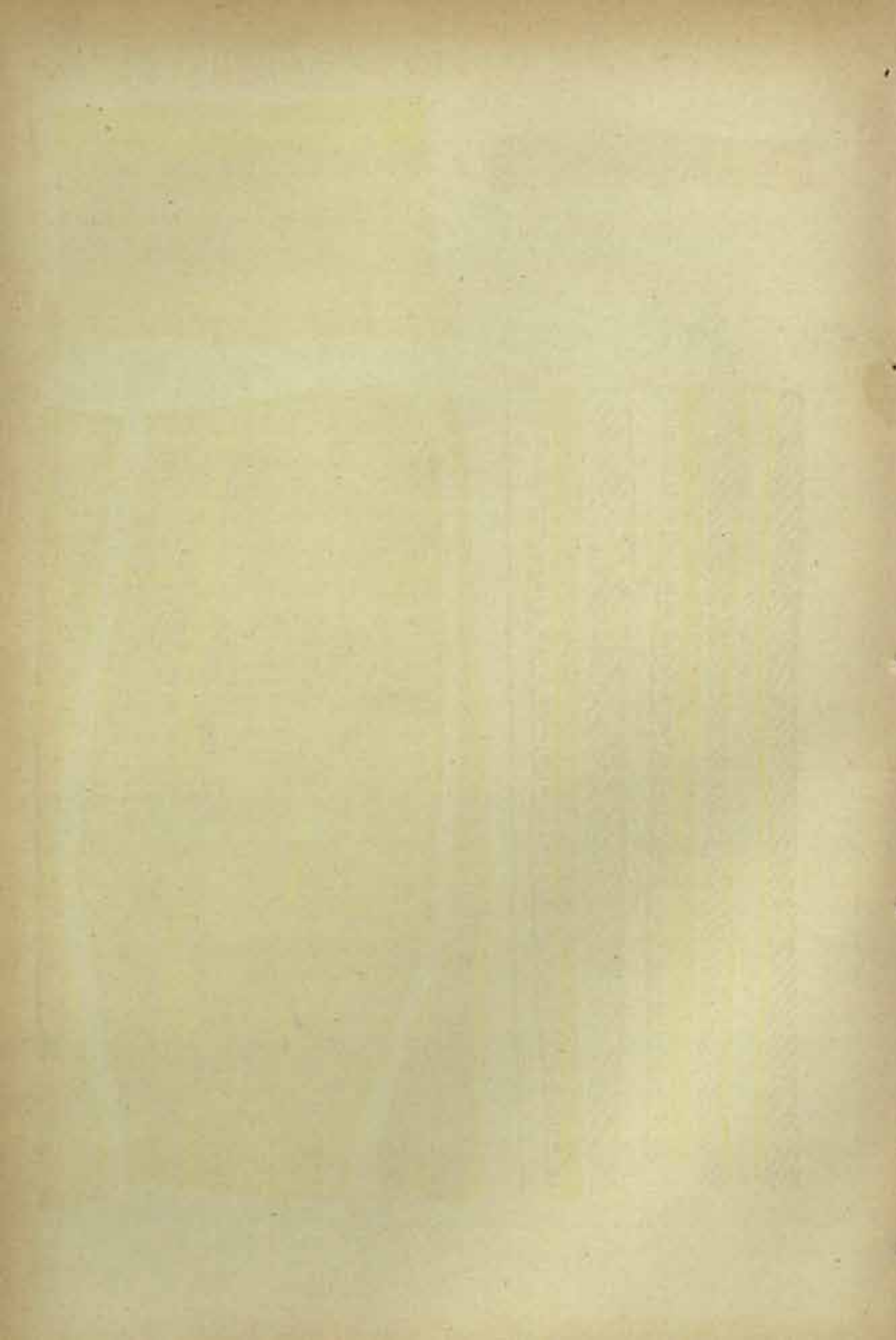


FIG. 1.

NOTES ON THE NATIVES OF DATHURST ISLAND, NORTH AUSTRALIA.



FIG. 2.



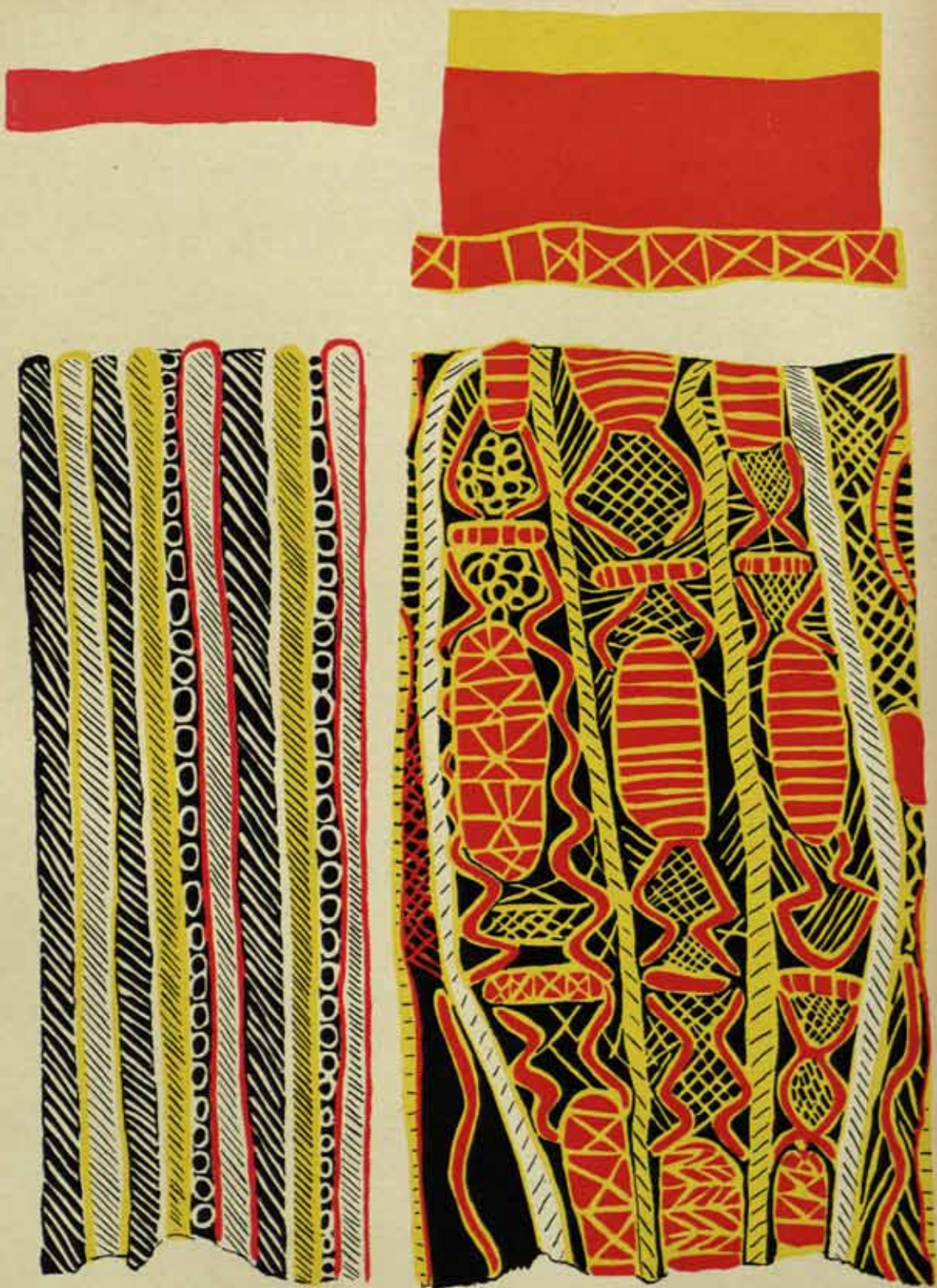


FIG. 2.

FIG. 1.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.



FIG. 2.

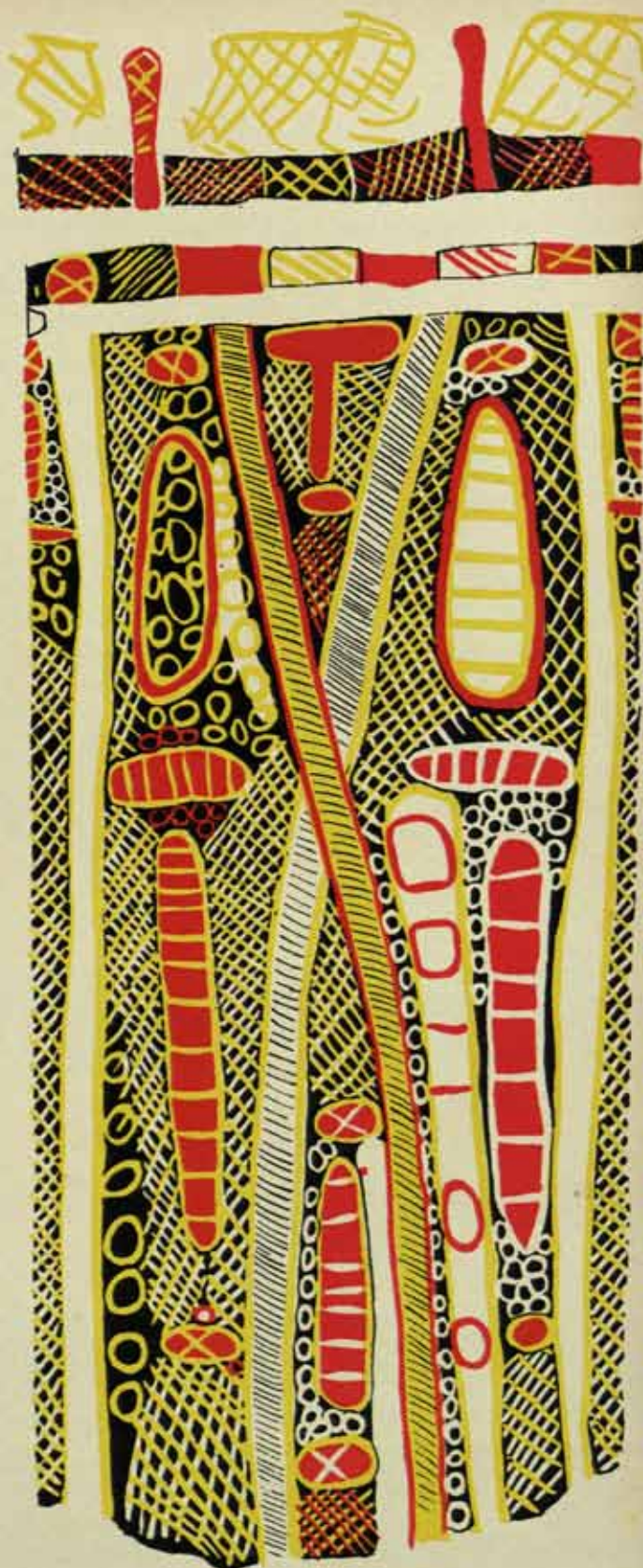


FIG. 1.



FIG. 1.

NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

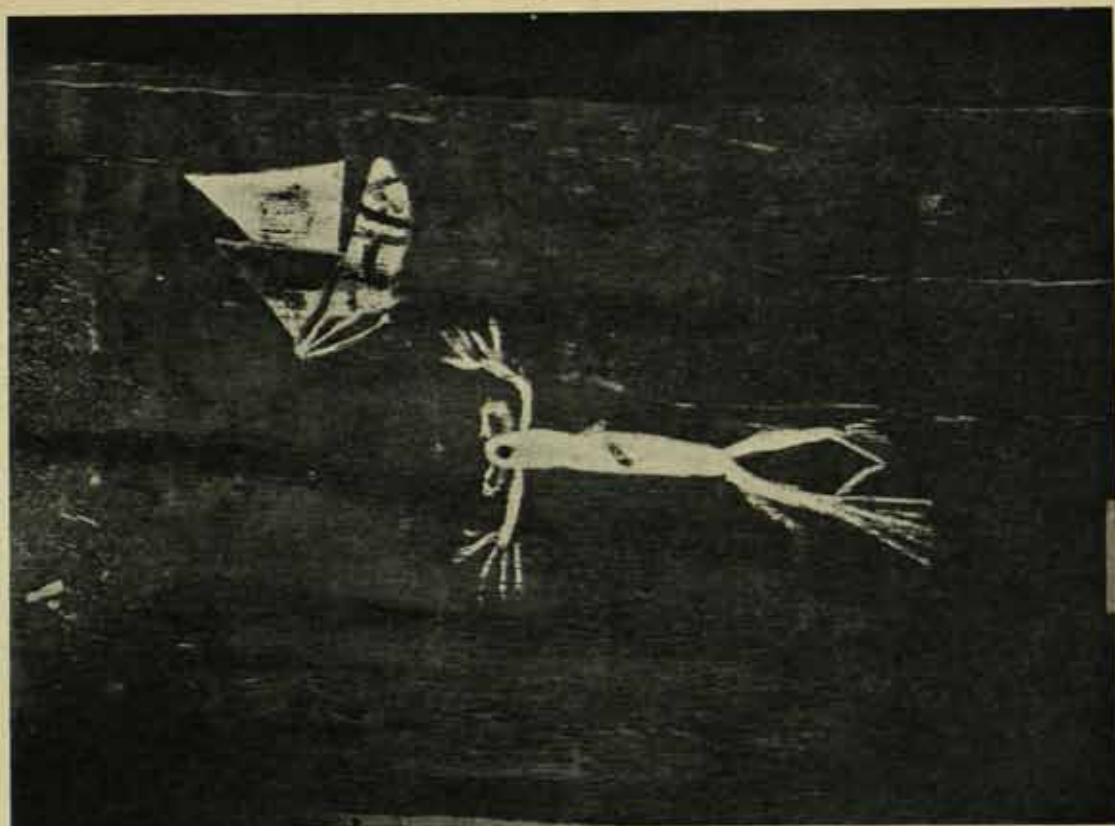
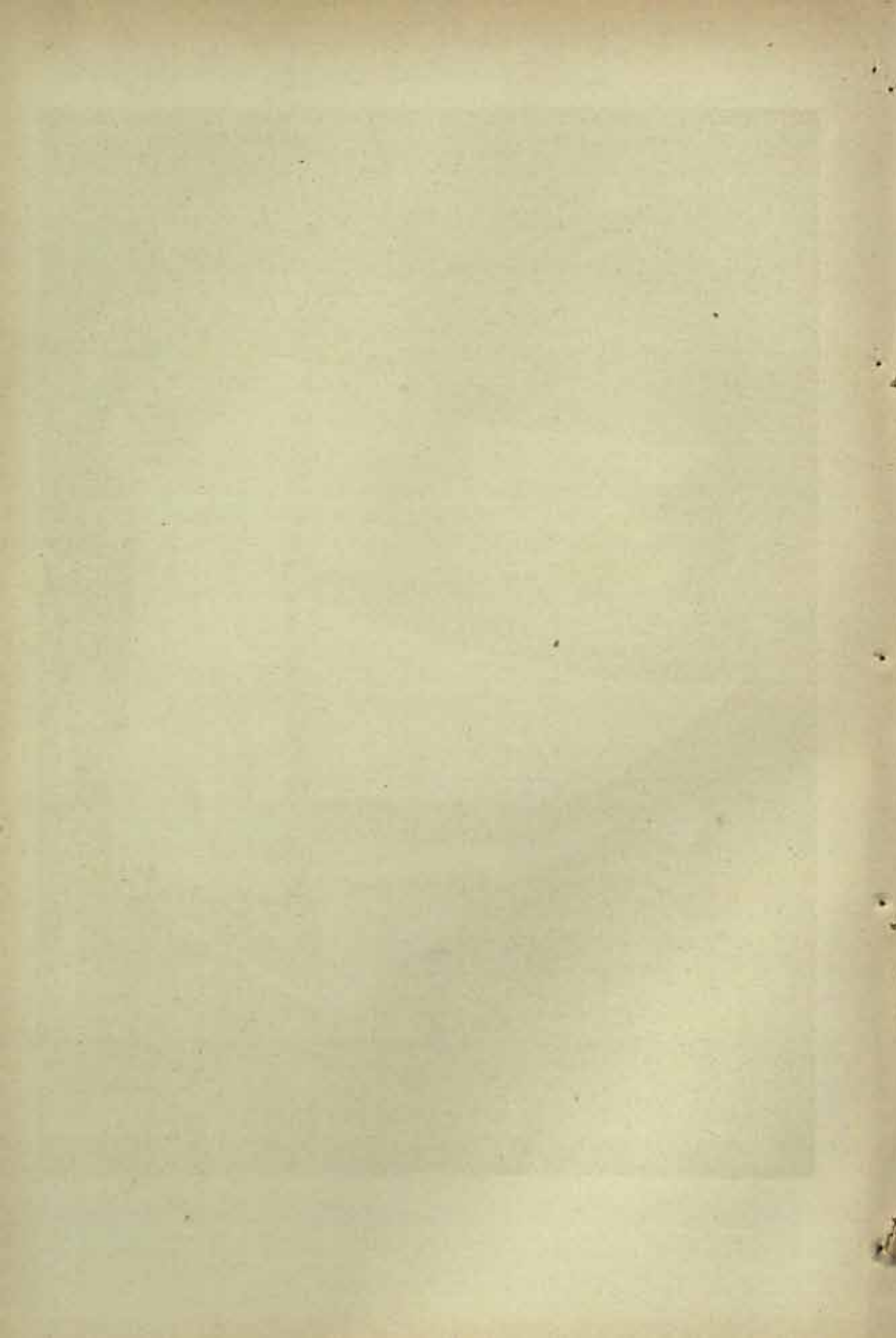
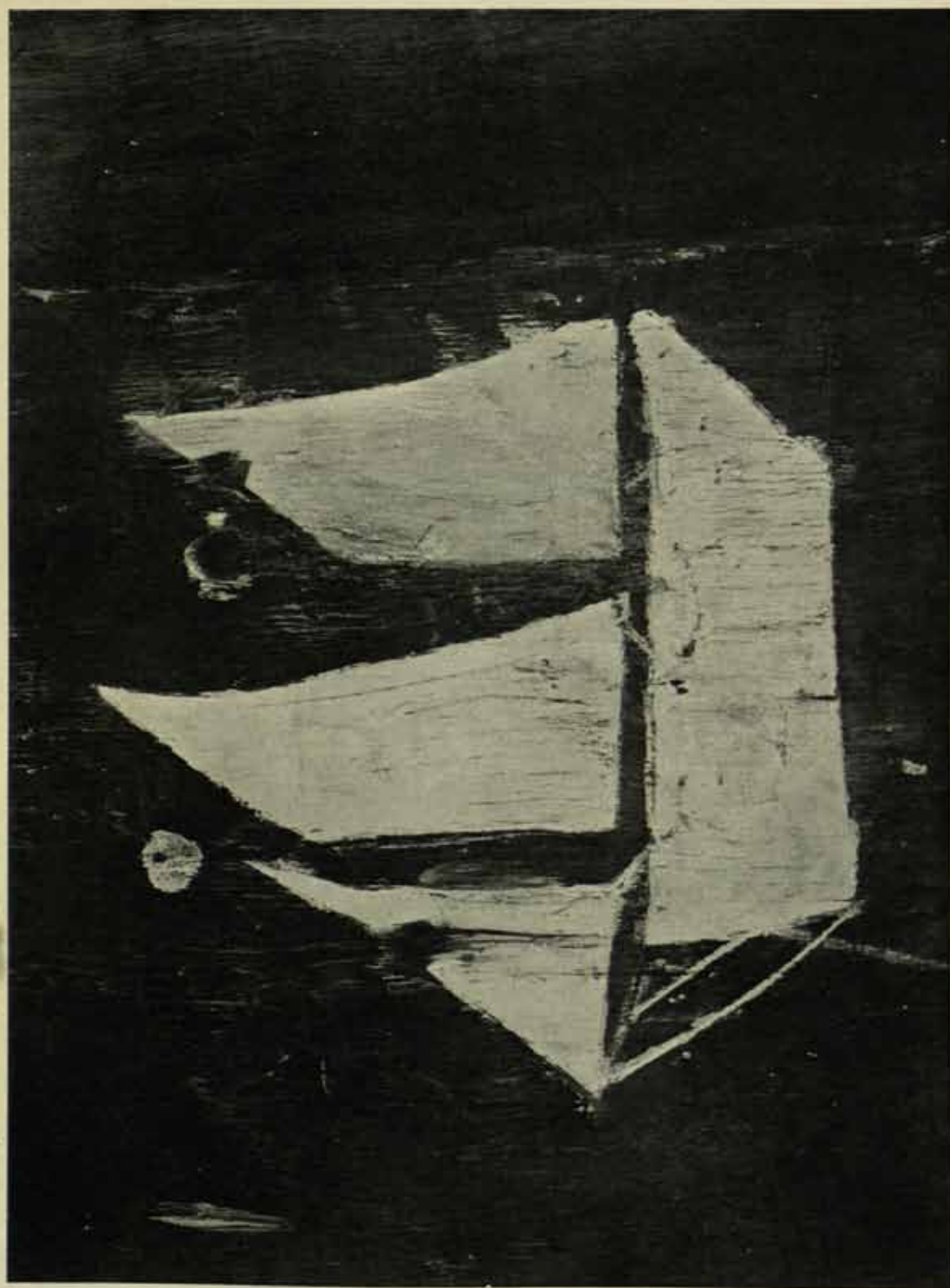


FIG. 2





NOTES ON THE NATIVES OF BATHURST ISLAND, NORTH AUSTRALIA.

PAVILAND CAVE: AN AURIGNACIAN STATION IN WALES.

The Huxley Memorial Lecture for 1913.

By W. J. SOLLAS, M.A., Sc.D., LL.D., F.R.S., Professor of Geology in the
University of Oxford.

[WITH PLATES XXI-XXIV.]

As a temporary habitation it would be difficult to find a more excellent cave than Paviland; situated on the face of the steep limestone cliffs of Gower, it looks out over the changeful waters of the Bristol Channel; behind it is a fertile land which must have provided a rich hunting ground in early times; it is roomy, well lighted and dry, with a natural chimney to promote ventilation—serving also to carry off the smoke of a fire kindled beneath; in front of the entrance is a rocky platform with natural seats where the hunter can sun himself in the open air. Add to this that it is concealed from the landward view and difficult of access to those unfamiliar with the way. Evidently in every respect a highly “desirable” hunting lodge! How its advantages appealed to the palæolithic man of Glamorgan during the Aurignacian age is shown by the great kitchen midden which forms its floor. Here, it is plain, he fabricated his implements and weapons, here he roasted his meat, flesh of the horse, the bison, the mammoth, and the bear, and here on one solemn occasion he entombed his dead.

Chance visitors have entered it in later times, as Roman coins attest, and nearly a century ago it began to attract attention by the discovery of the remains of extinct animals in its floor. Mr. L. W. Dillwyn and Miss Talbot commenced excavations and obtained a large number of teeth and bones which were originally deposited in Miss Talbot's collection at Penrice Castle but subsequently transferred to Swansea Museum, where they now remain. News of these doings brought Buckland down from Derbyshire to carry out that admirable exploration which is described with the master's accustomed skill in the classic pages of the *Reliquiæ Diluvianæ*.¹

Among the many facts of interest which were brought to light none approaches in importance the “Red Lady of Paviland,”—the remains of a skeleton, coloured red with iron ochre, and supposed by Buckland to have belonged to a woman

¹ Buckland, *Reliquiæ Diluvianæ*, London, 1823, pp. 82 *et seq.*

Associated with the skeleton, and evidently, as Buckland remarks, interred along with it, were numerous objects carved out of ivory as well as a heap of little sea-shells, both shells and ivory being stained like the skeleton with red ochre.

The source of this ivory was admittedly the mammoth tusks of which remains were found in the kitchen midden, and hence it might have been supposed that the men who had fashioned it were contemporary with this extinct elephant. But this is a conclusion which Buckland refused to accept, resting his position on the



FIG. 1.—ROMAN COINS (NAT. SIZE).

The three coins are all included within the same period (A.D. 274–306), those on the right and left belong to the time of Carausius (A.D. 287–293), the one in the middle to Constantine the Great (A.D. 274–306). The Carausius on the left bears the inscription *IMP CARAVSIVS PF AVG*, with the head of the emperor radiate (obverse) and a figure of Peace bearing an olive branch in the left hand and leaning on a staff in the right with the inscription *PAX AVG* (reverse). The Carausius on the right is not so well preserved; the head of the emperor is radiate and the visible inscription is *CARAVSIVS P(ET) AVG* (obverse); the female figure holds a staff in the left hand and a cornucopia in the other. The Constantine shows a helmeted female head and the inscription *VRBS ROMA* (obverse), and the wolf suckling Romulus and Remus, with the letters *TIB* below and two stars above, of which one has almost entirely disappeared (reverse).

assumption that the ivory was already in a fossil state before it was worked. On a later page he cites instances of fossil ivory found in Scotland and at Bridlington which even at the present day is still "fit for the turner's use."¹ There is a British camp on the hill immediately above the cave, and since ivory bodkins are sometimes found in British barrows, Buckland was led to believe that the "Red Lady" was an ancient Briton who inhabited the cave during the Roman occupation of Wales.

The existence of "antediluvial" man in Europe was a question already ripening for discussion in Buckland's time, and Paviland Cave was rich in material which

¹ Buckland, *Reliquiæ Diluvianæ*, London, 1823, p. 179.

might have assisted in its solution. Worked flints of many kinds abound in the deposits of the floor, but, curiously enough, Buckland makes mention of a single specimen only and this he compares to a strike-a-light. If, as is probable, he had before him one of the short square scrapers, of which this cave affords numerous instances, the comparison may be admitted, but it was unfortunate and misleading. We may perhaps attribute to this the fact that Buckland completed his examination of the cave without discovering its most important secret.



FIG. 2.—PAVILAND CAVE AS SEEN BY BUCKLAND, 1823.

A, mouth of the cave ; B, inner extremity of the cave, accessible to a dog but not to a man ; C, body of the cave ; D, chimney with ledges and hollows (L) ; E, bottom of the cave, "to which the sea water never reaches" ; F, mass of the same materials as E, but less disturbed and overhanging E in a small cliff, 5 feet high ; G, loose sea pebbles washed up during storms ; H, rock basins, produced by movement of large pebbles which still lie in them ; I, naked limestone of the floor. (After Buckland.)

When McEnery a few years later (1825), while exploring Kent's Hole, a cave much poorer in this kind of evidence, encountered flint implements along with the bones of extinct animals beneath the stalagmitic floor, he at once drew the obvious and, as it seems to us, inevitable conclusion ; but in this he was possibly aided by the fact that some of these flints resembled, not a modern strike-a-light, but an ancient arrow-head.

McEnery, who was thus the first to definitely establish the existence of palæolithic cave man, at once communicated his results to Buckland. Strange to say, this acute observer, who was naturally of the most open mind—as is shown by the abandonment of his preconceived views about the deluge, directly he had become acquainted with the work of the Swiss glaciers—received them with hostility and sought refuge in impossible and almost evasive objections.

I can only attribute this to the power of preconceived ideas. Buckland, as the result of his long continued and masterly researches into "diluvial" phenomena, was convinced that man had not inhabited Europe in company with the "antediluvial" animals, and in this conclusion he was fully supported by the famous Cuvier. No one who is at all aware of the power of a prepossession will blame my illustrious predecessor; fortunate indeed is the man whose prepossessions happen always to accord with the truth.

The age of the "Red Lady" long remained a vexed question. Falconer followed Buckland in attributing the interment to Romano-British times; but to do so he had to withdraw the admission, made by Buckland, that the associated ivory objects had been carved from mammoth tusks; they were, he asserted, imported from France, and that such imports were made during the Roman occupation he proves by a quotation from Strabo, which runs as follows: "They (the Britons) pay but moderate duties on the imports . . . from Kettica, which are ivory bracelets and necklaces, amber, vessels of glass, and small wares."¹

When, however, Lartet and Christy, fresh from Perigord, visited the remains from Paviland which Buckland had placed in the University Museum of Oxford, they at once recognized the complete correspondence of all the facts with those they had observed at Crô-Magnon. There also skeletons had been found rouged over with ochre and associated with mammoth tusks, ivory ornaments, and marine shells. In both cases, as they believed, it was the men who were contemporary with the mammoth who had made use of its ivory.²

This, however, was not the opinion of Professor W. Boyd Dawkins,³ who approached the question a few years later. Laying special stress on the disturbed condition of the cave deposits and on the presence of bones of sheep, he reaffirmed Buckland's conclusion but in a more general form, stating that "the interment is relatively more modern than the accumulation with extinct mammalia."

So the matter rested for nearly forty years, when (1911) M. Cartailhac being on a visit to Oxford, partly as the recipient of our honorary degree, called at the Museum and expressed a wish to see the bones of the "Red Lady." He then confided to me his belief that the interment was not only palæolithic but more precisely that it was of Aurignacian age. This led me to make a search for the ivory

¹ *The Geography of Strabo*, translated by H. C. Hamilton and W. Falconer, 1854, vol. i. p. 298.

² Lartet and Christy, *Reliquiæ Aquitanicæ*, London, 1863, pp. 93, 94.

³ W. Boyd Dawkins, *Cave Hunting*, London, 1874, pp. 232-234.

implements in our collection, which I had been unable to show to M. Cartailhac,¹ and on discovering them I found their agreement with the well-known Aurignacian forms to be so exact that I had no difficulty² in accepting the opinion of my distinguished colleague. M. Cartailhac has since developed his views in detail; they are contained in his masterly contribution to the famous monograph on the caves of Mentone,³ where also he enters into a full discussion of the general subject of palæolithic interments, once a burning question among Continental anthropologists. For G. de Mortillet had stoutly denied that palæolithic man paid any regard to his dead, maintaining, in opposition to M. Rivière, that the numerous interments in the Grotte des Enfants and the other caves of Mentone were all of neolithic age, and, further, that such a thing as a palæolithic interment nowhere exists. This controversy is at length happily terminated; the successive burials in the caves of Mentone are now known to have taken place in Aurignacian times, for each was found to be completely covered over by an intact layer containing hearths and an Aurignacian industry; and that interment was practised at an even still earlier period is proved by several instances, of which the most notable is that afforded by La Chapelle-aux-Saints, where a Neanderthal skeleton was discovered in a Mousterian tomb.

In the summer of last year (1912) Professors Boule and Breuil, who had come to England for the purpose of investigating the alleged occurrence of flint implements at the base of the Red Crag, continued their journey to Oxford and made a careful examination of the remains in the Paviland collection. Professor Boule was much impressed with the general resemblance of the human bones to those of the Crô-Magnon race and Professor Breuil at once recognized the Aurignacian character of the ivory implements. Professor Breuil and I then agreed to visit Paviland together in search of further information. On the way we called at the Swansea Museum and found there an extremely interesting collection of flint and bone implements which had been obtained from Paviland by Colonel Wood, Mr. Vivian, and Colonel Morgan. Among them Professor Breuil identified numerous upper Aurignacian graters and scrapers as well as some examples of early Solutrian flaking.

We then proceeded to Paviland, which is situated on the coast about 15 miles west of Swansea, but our first attempt to enter the cave was unsuccessful owing to the state of the tide and our ignorance of the approach from the landward side. The next day we were guided by Mr. John Gibbs, a farmer at Rhossili, to a path which leads down a steep valley to a recess on the right-hand side (Plate XXI, Fig. 1); it is necessary to ascend this, walk round it and descend on the other side, when all that remains is—in Buckland's words—some "dangerous climbing along the face of a nearly perpendicular cliff" (Plate XXI, Fig. 2).

¹ "Quelques ossements humains sont parvenus, sans honneur, au museum d'Oxford. Je n'ai pu savoir le sort des objets," E. Cartailhac, *Les Grottes de Grimaldi*, 1912, tom. ii, fasc. II, p. 305. For "ossements humains" we should doubtless read "objets en ivoire."

² W. J. Sollas, *Ancient Hunters*, London, 1911, p. 213.

³ E. Cartailhac, *tom. cit.*, pp. 304 et seq.

This proved not to be so difficult as it looks,¹ and at the top a scramble to the right brought us face to face with the cave (Plate XXI, Fig. 3).

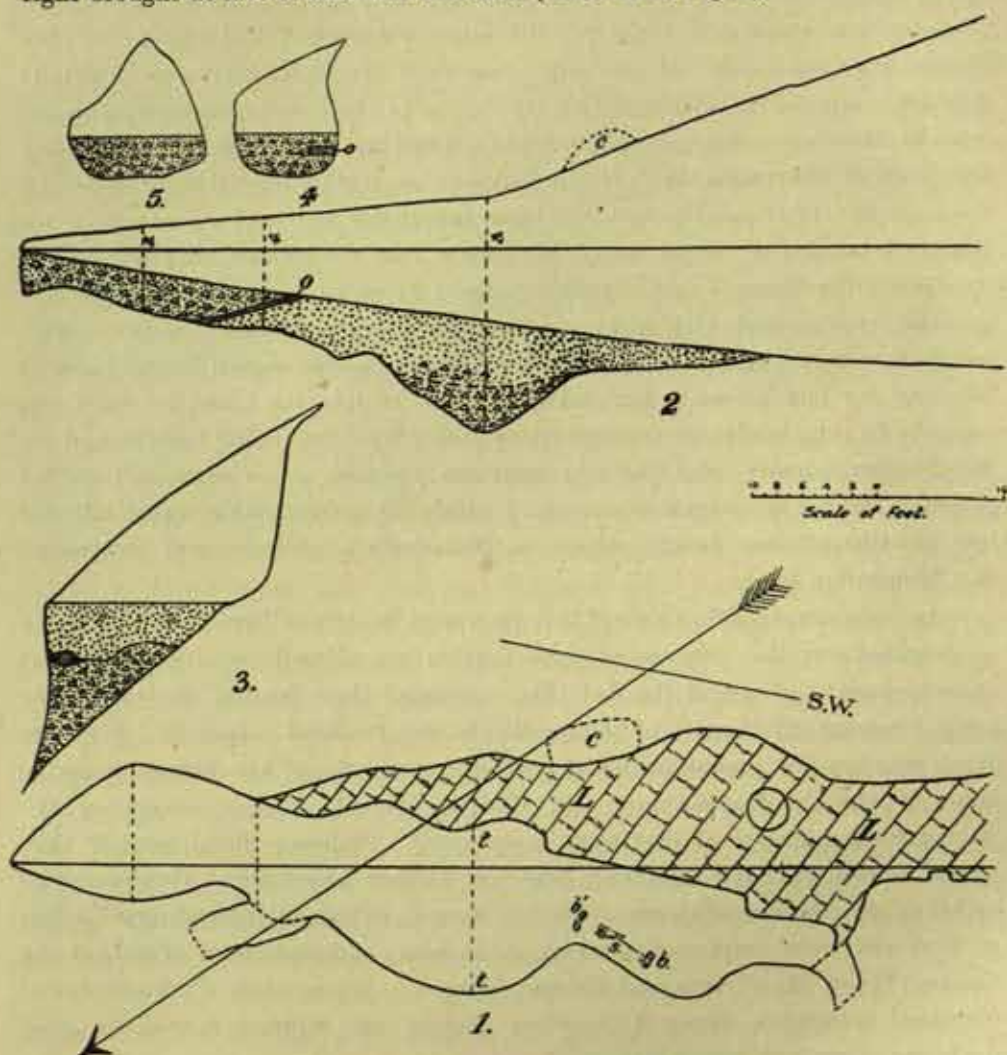


FIG. 3.—PLAN AND SECTIONS OF PAVILAND CAVE.

1. Plan of the floor: *b. b.*, limestone boulders; *s.*, supposed position of the skeleton; *t. t.*, line of transverse trench; *L. L.*, limestone not covered with cave earth; *c.*, projected position of the chimney. 2. Longitudinal section: *o.*, band of ochreous clay. 3, 4, 5. Transverse sections taken at positions indicated by lines bearing corresponding numbers in 2. Horizontal and vertical scale the same.

We were struck with the change that had taken place, since Buckland's visit in the aspect of the floor. The cliff, which he describes as cut into the cave deposits, 5 feet high and running longitudinally up the middle of the cave, had disappeared, and a smooth, pebbly surface swept uniformly like a beach with a

¹ Later, during our systematic exploration of the cave, the climb was made several times by a lady, Mrs. Cunningham, under the guidance of her son. The expert climber will find a really dangerous way back from the cave by continuing past it to the west till he reaches a deep gully; the ascent of the cliff at this point is possible and interesting. I have to thank Mr. Cunningham for showing me the way up.

rapidly rising slope from the entrance to the extremity. It was evident that during exceptional storms the sea had free access to the cave.

We commenced to dig and the Abbé soon obtained several Aurignacian implements, including a Gravette point and some doubtful Mousterian flakes, from no great depth below the surface. From his observations it was clear that the cave still contained much interesting matter and I was urged by Professor Breuil to undertake its exploration with the view of writing a full account of this Aurignacian station—the earliest discovered in Britain. I consented to do so, though reluctantly, for it seemed to me that Professor Breuil, the virtual creator of the Aurignacian system, was the proper person to perform this task. I was encouraged, however, by his promise to examine the spoils, a promise which he has fulfilled most generously: all the flint implements we discovered have passed through his hands, and it is by him that they have been named and classified.

Permission to dig having been obtained from Miss Talbot, who owns the cave, I invited and received the co-operation of the Cardiff Museum in the work of exploration. The Museum was ably represented by Mr. Arthur Loveridge, who was present on the spot during the whole time the excavations were in progress. My friends, Dr. Marett and Mr. Henry Balfour, gave invaluable aid as volunteers, so, too, did Mr. Ward, of New College, a university blue who proved a mighty man with the spade. My assistant, Mr. C. J. Bayzand, was our photographer and is responsible for all the illustrations of this lecture. We were extremely fortunate in our workmen, Harry Long and Jack Gibbs, who entered fully into our plans, and watched for specimens with eagle eye; very little that was of value was allowed to escape their hands.

Our first step was to construct a plan. This (Fig. 3, 1) shows how the cave, which is 70 feet in length, runs fairly straight into the cliff in a direction which is slightly south of south-west. The sides are undulating and give passage here and there to tributary channels: many pocket-like holes and crevices open at about a man's height, and as similar holes were often used by the palæolithic hunters to store their most treasured implements, these were ransacked by Dr. Marett, every one, but in vain. Along an irregular line crossing from the western to the eastern side of the cave the limestone is seen emerging from below the cave deposits to form the eastern half of the floor.

In the longitudinal section (Fig. 3, 2) the floor of cave earth is seen to rise from the entrance towards the blind end with a uniform slope of 3 in 20. How great a change has taken place since Buckland's time will be seen by reference to his section (Fig. 2), which represents the remains of the original floor as possessing a horizontal surface and ending on one side in a vertical cliff.

Of the transverse sections that given in Fig. 3, 3 is especially instructive, it shows how the form of the cave has been determined by two sets of master joints, one dipping at about 45° , the other more nearly vertical: they cross the strike of the carboniferous limestone almost at right angles. The sea has played a large part in the work of excavation, probably at a time corresponding with the

formation of the raised beaches which are found along the coast at heights of from 25 to 40 or even 50 feet above the existing sea-level.

Subsequent to the formation of the raised beaches the sea-level must have fallen considerably, probably at least 120 feet, as supposed by Prestwich.

It was during this period of emergence that the cave was inhabited by man.

Still later the sea again rose and—possibly after some slight oscillations—rested at its present limits.

Whether these movements occurred during an interglacial episode or were wholly post-glacial is an open question. Eminent observers, particularly Tiddeman and Strahan, have asserted that a part at least of the cave deposits met with along the coast of Gower are older than the glacial drift of the district. The succession of littoral deposits along the coast of Gower is as follows:—

Glacial bed, gravelly boulder clay.

Head, a talus of angular limestone fragments.

Blown sand, more or less cemented into hard rock.

Raised beach with erratics and modern marine shells.

The superposition of the boulder clay has been established by Mr. Tiddeman's observations: nothing has yet been discovered to suggest that these are in error. Mr. E. E. L. Dixon¹ admits that in Caldey Island the glacial deposits appear to overlies the raised beach, though the section there is obscure; and more recently Mr. A. L. Leach² has described an exposure at Porth Clais in N.W. Pembrokeshire, which supplies the strongest possible confirmation. The boulder clay is there seen to sweep right over the head and the raised beach on to a rocky platform with a glaciated surface (Fig. 4).

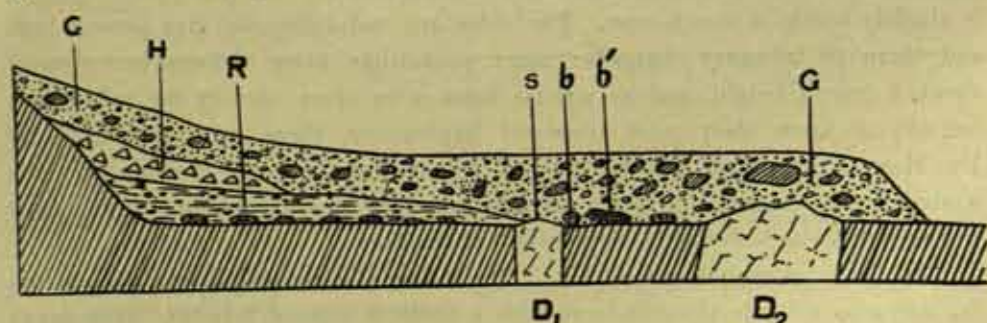


FIG. 4.—DIAGRAMMATIC SECTION OF THE RAISED BEACH AND BOULDER CLAY NEAR PORTH CLAIS, ST. DAVID'S. (After A. L. Leach.)

R, stratified shingle and boulders of the raised beach; H, head; G, boulder clay; D₁, D₂, intrusive dykes; s, the surface of D₁ is striated; b b', striated boulders derived from the raised beach.

¹ E. E. L. Dixon, "Summary of Progress for 1906," *Mem. Geol. Survey*, p. 63.

² A. L. Leach, "On the Relation of the Glacial Drift to the Raised Beach near Porth Clais, St. David's," *Geol. Mag.*, 1911, vol. viii, p. 462.

The raised beach of Gower is the local representative of a widely distributed feature, which is found on both sides of the English Channel and elsewhere. In many places it contains at the base large erratics which are generally admitted to have been deposited by floating ice, and thus to indicate an earlier glacial episode (Riss) than that of the boulder clay (Würm).

We may infer that when the raised beach was in process of formation the caves of Gower were occupied by the sea, and consistently with this we find in some of them (Bacon Hole and Mitchin Hole) a deposit of sand, containing marine littoral shells, which lies immediately upon the rocky floor, and is covered over by whatever other deposits may be present. To correlate this marine sand with the raised beach seems only reasonable, but if we take this step it would then seem to follow that the succeeding contents of the caves are older than the culmination of the last glacial episode (Würm) and younger than the last but one (Riss).

This conclusion is in accordance with the chronology of the upper and middle palæolithic industries which I had already suggested in 1911,¹ and it is in general agreement with the views of Penck and Brückner. There is, at least, one doubtful point, however, in my scheme: I have placed the Chellean on the remote side of the third glacial episode; whether this is its true position or not will depend upon the result of a renewed examination of the bouchers found at Biddenham and Hoxne. If these should all prove to be Acheulean my chronology may stand, but if, as is most likely, some of them should be Chellean, then it is clear that this industry would have to shift its position into the last genial episode (Riss—Würm).

In a courageous attempt to reduce to order the raised beaches and other quaternary deposits which occur along the south coast of England, Wales, and Ireland, Mr. Henry Dewey² has arrived at some interesting results, which will be best understood from the following table. I may venture, however, to point out

| Climate. | Industry. | Deposits of the South Coast. | The Valley of the Somme. |
|---------------------|----------------------------------|----------------------------------|--------------------------|
| Arctic | — | Boulder clay | — |
| Advancing cold ... | Mousterian ... | Combe rock and head | Upper löss. |
| Cold? | Acheulean ... | — | Lower löss. |
| Warm temperate { | Chellean ... } Strepyan ... } | Cemented sands and cave sands... | 30-metre terrace. |
| Retreating cold ... | — | Erratics of raised beach | — |
| Arctic | — | — | — |

¹ W. J. Sollas, *Ancient Hunters*, p. 404.

² Henry Dewey, "The Raised Beach of North Devon," *Geol. Mag.*, N.S., Dec., V, vol. x, pp. 154-163, 1913.

that the correlation of the upper löss with the Combe rock and head is doubtful, even improbable; and, again, the Aurignacian and Solutrian industries, and perhaps the Magdalenian, in addition to the Mousterian, should be assigned to this deposit.

The nearest approach to a standard succession of quaternary deposits and industries is that of St. Acheul, which has been established by the painstaking genius of M. Commont.¹ It is of as fundamental importance to the study of palæolithic history as Lapworth's classic section at Dobb's Lynn is to the study of Ordovician geology. I give it here in a generalized form:—

| | | | | | |
|--|---|--|-----|-----------------------|--|
| | | RECENT. | | | |
| | | Azilian. | | | |
| | | Magdalenian. | | | |
| | | Quaternary. | | | |
| Upper Löss IV. Glacial episode (Würm). | { | Ergeron, weathered... | ... | Solutrian | ... Cold fauna. |
| | | " | ... | Aurignacian, Upper | ... |
| | | Gravels | ... | " Middle | ... |
| | | Ergeron | ... | — | ... |
| | | Gravels | ... | Mousterian, Upper | ... |
| | | Ergeron | ... | — | ... |
| nd of the third genial episode. | { | Gravels, angular | ... | Mousterian, Lower | ... |
| | | Stratified sands and gravels (at Montières-les-Amiens). | ... | " Lowest ² | ... Warm fauna. |
| Lower Löss | { | Löss | ... | Acheulean, Upper | ... Temperate fauna (Oscillation?). |
| | | " | ... | " Lower | ... Warm fauna. |
| Third genial episode. | { | Gravels | ... | " " | ... |
| | | Gravels of low terrace | ... | Chellean, Upper | ... |
| | | Sands on river gravel of second terrace. | ... | " Lower | ... |
| | | Gravels at base of second and third terraces. | ... | Strepyan... | ... Fauna with Plio- cene affinities at Abbeville. |

The löss of the Rhine corresponds in all its subdivisions with the löss of the Somme, and it presents a lower löss with a warm fauna which is succeeded by an upper löss with a cold fauna. But the löss of the Rhine can be traced up the valley till it is brought into intimate relations with the glacial deposits of the Alps, thus, according to M. Commont, providing us with good grounds for assigning its higher member to the last glacial and its lower member to the last genial episode.

But the age of the löss is one of the most vexed questions in quaternary history. According to Professor Haug³ the two sheets of löss in the Rhine valley

¹ V. Commont, "Chronologie et stratigraphie des industries protohistoriques, néolithiques et paléolithiques dans les dépôts holocènes et pleistocènes du nord de la France," *Congrès Internat. d'Anthropologie*, C.R., Geneva, 1912, pp. 239-254.

² V. Commont, "Moustérien à faune chaude dans la vallée de la Somme à Montières-les-Amiens," *tom. ii.*, pp. 291-300.

³ E. Haug, *Traité de Géologie*, Paris, 1911, tom. ii, 1815.

lie one upon the fluvio-glacial deposits of the last (Würm) and the other on those of the penultimate (Riss) glaciation. If this be so it is evident that the whole of the upper palæolithic deposits with their industries and fauna are later than the last boulder clay or glacial drift; a conclusion which is directly opposed to the results of Mr. Tiddeman's observations made on the coast of Gower. The problem, therefore, remains unsolved. It would be useless to discuss it: what is really wanted is further observation in the field.¹

As we shall learn later, Paviland Cave itself has furnished us with the fauna and industry of the upper löss only, but in some other caves of the coast, Mitchin Hole and Bacon Hole, the warm fauna, represented by *Elephas antiquus* and *Rhinoceros hemitachius*, was found by Falconer, unmixed with the cold fauna, in the lower part of the cave deposits. In two other instances, however, Spritsail Tor and Long Hole, the two faunas occurred mixed together; at the same time Falconer expressly mentions that in Spritsail Tor the molars of *E. primigenius* usually "present a much fresher appearance and contain more animal matter than those of *E. antiquus*."

On a review of these observations it would seem probable that Paviland Cave was excavated before the great glaciation of the British Isles; it may, judging from analogy with other caves along the coast, have been entered by the sea during the formation of the raised beach, but its occupation by man was confined within the limits of the last glacial episode, possibly following upon the deposition of the glacial drift during the climax of the cold conditions.

We may now proceed to give an account of our exploration. The first step was to obtain a transverse section of the deposits by cutting a trench across the floor of the cave, 30 feet from the entrance and 8 feet in depth. The face of the cutting was found, however, to be so badly illuminated that observation was impossible, so we proceeded to clear away the material in front which excluded the light. While doing so we came across a large limestone boulder, a rough parallelepipedon in shape, but so large and unlike any we had seen before that the workmen at once exclaimed "A monument!" It lay between two and three feet below the surface and measured 1 foot 10 inches in length, 10 inches in breadth and height at one end and 6 inches at other. A little later, about 6 feet further away from the entrance and on the same level we found two others, not quite so large. In the earth between and round about them we found plentiful traces of ochre and many fragments of ivory, including bits of ivory rods such as Buckland discovered in the vicinity of the "Red Lady." From Buckland's plan of the cave it is evident that this skeleton must have been somewhere near; it is represented as extended with its long axis nearly parallel to the left (west) wall of the cave and its feet towards the entrance. It seems, therefore, extremely likely

¹ The question, in the case of the Rhine valley, depends on the identification of Professor Steinmann's middle terrace of the lower Rhine. Dr. L. van Werveke and others regard it as the equivalent of the lower terrace of the upper Rhine, Professors Penck and Brückner as the equivalent of the upper terrace.

that the boulders had been placed in position—one at the feet and two at the head of the corpse—at the time of interment; at the same time it is difficult to understand, if this were the case, how they came to escape the keen-sighted observation of Buckland.

In the course of this excavation we obtained a considerable number of flint implements and bones of extinct mammalia: the bones were almost all broken and many of them burnt and blackened: all were irregularly scattered through the deposit without any trace of order or arrangement. The earth being now cleared away it was possible to examine the face of the trench. The result was disappointing. The implement-bearing deposit—a reddish-brown earth crowded with angular and rounded fragments of limestone which extended down to a depth of from 4 to 5 feet—had evidently been much disturbed: nowhere was any trace of a definite industrial layer to be seen, the hearths had been broken up and their contents distributed pell mell. This accords with Buckland's statement that the floor had been already dug over before his visit; a similar observation was made by Falconer.

Below this layer is a barren cave earth full of limestone fragments which extends to the rocky floor, attaining in one place a depth of 14 feet. At a depth of 7 or 8 feet from the original surface of the floor, part of the lower jaw of some kind of deer was seen projecting from it and we imagined that this might indicate the existence of an industrial layer, but on subsequent excavation this proved a vain hope.

The barren ground was marked off from the implement-bearing deposit by an irregular greyish white band which might perhaps have resulted from weathering, and on the western side of the cutting this was succeeded by a thin layer of well washed pebbles resting on a dark sand about 6 inches thick which was speckled white with comminuted sea-shells and precisely resembled the sea sand now driven in times of storm over the limestone ledges in front of the cave. The layer of pebbles thickened out towards the wall of the cave and on reaching the wall descended in a vertical sheet.

The restriction of these exceptional deposits to the western side of the section, which in Buckland's time was exposed at the foot of the longitudinal cliff (Fig. 2), led me to suppose that they might be explained on the supposition that the sea, entering the cave during storms, had first cut out a narrow fissure in the cave earth next the wall of the cave and that this was then filled with pebbles; continuing its work it enlarged the fissure, forming successive cliffs till the state of affairs described by Buckland was reached. Since then the planing down of the cliff would have led to the covering up of any deposits left by the sea.

The implement-bearing deposit was removed in successive layers and no signs of stratification were met with till we had advanced to within 23 feet of the inner end of the cave, when we again came across a band vividly coloured with red ochre and comparatively rich in clay; this extended from the eastern wall only half-way across the cave; sloping backwards and downwards it reached the rocky floor and

disappeared at a distance of 8 feet from its outcrop. This was the most marked line of separation we encountered anywhere, but it does not seem to have had any significance, since the same kinds of implements were found both above and below it.

THE STONE IMPLEMENTS.

For so small a cave Paviland proved remarkably rich in worked flint and chert. In our excavations over 3,600 flakes and fragments were found, and of these some 700 or 800 are implements. Many had previously been extracted by other visitors, several hundred flakes and fragments are preserved in the Swansea Museum, and I owe to the kindness of Mr. Cunnington an interesting series of 50 implements. Our richest finds were made at the inner end of the cave where the deposits had been less disturbed than elsewhere.

The material.—The flint, all derived originally from the Chalk, is of many kinds, owing probably to its having been collected from the adjacent glacial drift, in which stones scattered over a wide area have been swept together by the movement of the ancient ice. But if this explanation should prove to be correct it becomes clear that the Aurignacian people cannot have inhabited the cave till after the maximum of the last glacial episode.

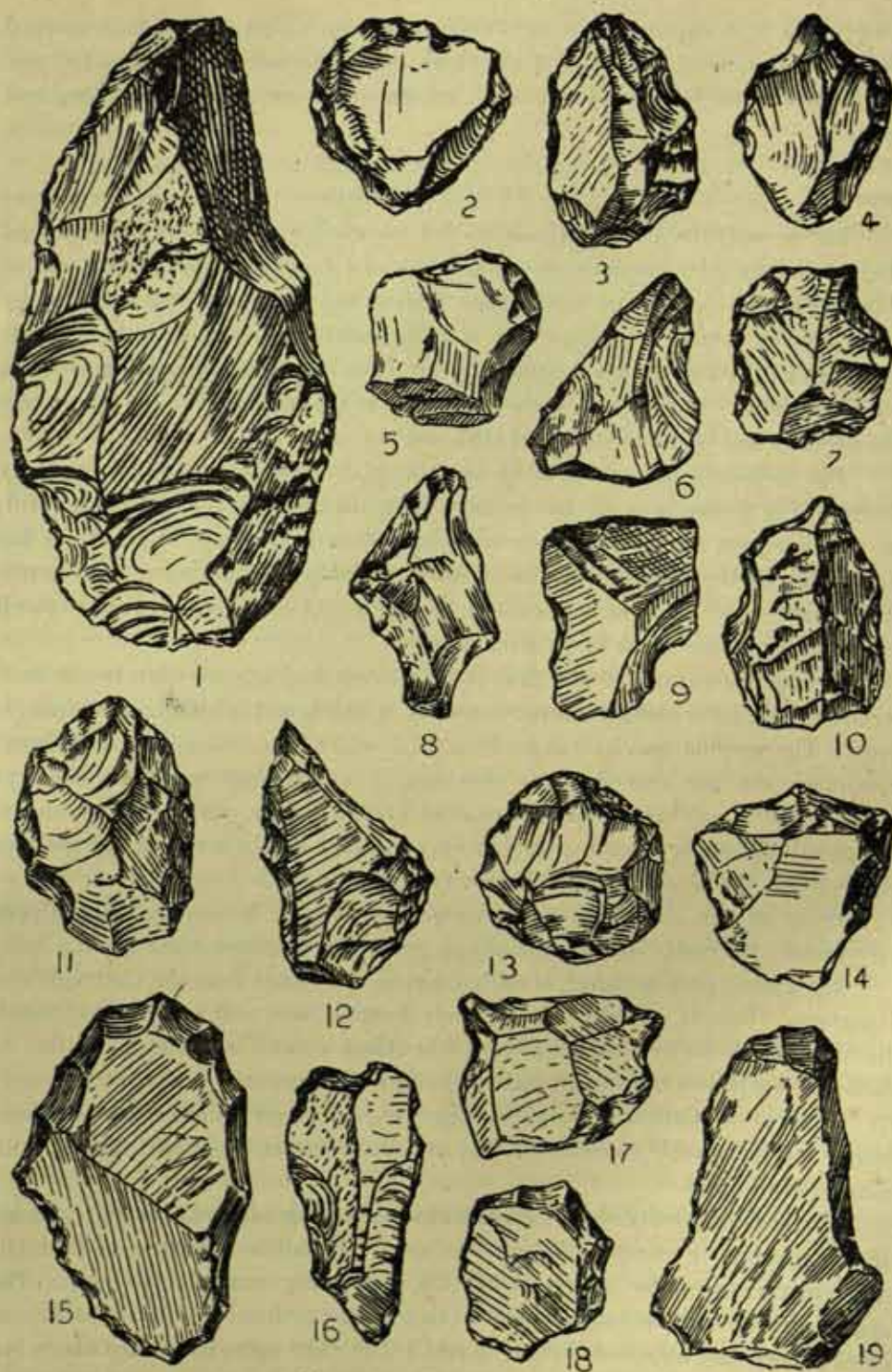
A common variety of the flint is translucent and honey-yellow in colour, it weathers readily; another, rather common, is black, and a third, rather rare, is grey. The specific gravity ranges from 2.57 to 2.61, as determined in different specimens; in one and the same specimen it is extremely uniform. The flint often contains patches of opaque material, grey in colour, without lustre, and of comparatively coarse texture; this is very resistant to the action of the weather and is never patinated; its specific gravity is 2.6.

Some of the chert also is Cretaceous, its original home being the Upper Greensand; it usually contains glauconite grains and weathers white.

The greater part, however, is Carboniferous, and comes from the Carboniferous limestone. This is usually black, rarely lustrous, and scarcely ever patinated. In thin slices under the microscope the black colour is found to be due to diffused transparent brown material, doubtless carbonaceous.

Some of the Carboniferous chert is grey or greenish grey; one variety is without colour and remarkably translucent. The grey flint is sometimes dotted through with minute white spots.

The specific gravity of the Carboniferous chert ranges from 2.6 to 2.67. Under the microscope it presents the same granular crystalline structure as flint, but different varieties differ greatly in texture, some being remarkably coarse. The specific gravity and resistance to weathering combine to show that the Carboniferous chert is composed almost entirely of quartz. The white spots mentioned above are granular aggregates of an undetermined mineral which has a very high refractive index and strong double refraction.

FIG. 5.—MOUSTERIAN IMPLEMENTS ($\times \frac{3}{4}$).

Nos. 1, 2, 11, 13, and 14 are flint, the rest are dark Carboniferous chert, except No. 15, which appears to be some kind of igneous rock: it is very fine grained and of a greenish black colour.

Relative Age.

The only direct and trustworthy evidence of the relative age of the cave implements is the order of succession of the industrial layers in which they occur. But as we have seen, our excavations failed to reveal the existence even of any industrial layers and consequently our classification of the implements rests solely on their morphological characters. It will be understood therefore that an implement which is assigned say to the Mousterian class is not necessarily of Mousterian age. Indeed it may be added as an independent statement that implements of Mousterian workmanship are well known to occur in Lower Aurignacian deposits; as one among several instances we may cite the deposits of La Coimba-del-Bouïtou, so admirably investigated by the Abbés Bardon and Bouyssonie.¹

On the other hand we must not press our disclaimer too far; the order of the successive industries with their characteristic implements having been sufficiently established by observation in France, Belgium, and Germany, the form of the implements becomes a guide to the succession in those cases where this cannot otherwise be discovered. The characteristic implements thus afford precisely the same assistance here as characteristic fossils in geology; and all the implements classified as Aurignacian may confidently be accepted as belonging to that age: indeed, we may go further still, for though we cannot certainly assign each individual Aurignacian implement to its special horizon, yet we can, on the evidence of a group of these implements, definitely assert the existence of certain subdivisions, such as the Middle and Upper Aurignacian.

MOUSTERIAN.

The cave afforded numerous examples of Mousterian implements both in flint and chert, more especially in chert of the black variety. The flaking is generally rude and characterized by the removal of rather thick scales, which are short and broad. The forms, though often irregular, include a great number of varieties, some of which seem to be precursors of the more finished Aurignacian implements.² They may be grouped as follows:—

1. A rather large ovate flint flake, with a plain face below, retaining the bulb of percussion; the upper surface, which preserves some of the crust, boldly flaked, and the edges serrated by minute Mousterian retouches (Fig. 5, No. 1).
2. Large, fairly thick racloirs,³ trimmed all round and carefully retouched

¹ L. Bardon, A. and J. Bouyssonie, "Station préhistorique de la Coimba-del-Bouïtou, près Brive (Corrèze)," *Bull. Soc. sci. hist. et arch. de Corrèze*, 1907-1908, 54 pp.

² The number and variety of the Mousterian implements is so considerable and their patina, according to the Abbé Breuil, so distinctive that I am inclined to think a Mousterian horizon must originally have been present.

³ I have tried in vain to find simple English equivalents for the French "grattoir" and "racloir"; "scraper," without qualification, has too wide a meaning, and "scratcher" and "rasper" are inappropriate; I have, therefore, retained the French terms, which are now sufficiently familiar to English anthropologists. "Scraper," however, may be used as a general term.

- along one edge. The bulb of percussion is generally removed (Fig. 5, Nos. 2, 15; Fig. 6, No. 20).
3. Rough, rather thick, biconvex lenticular or disciform bodies (Fig. 5, Nos. 5, 13), occurring both in flint and chert. Their purpose is obscure; for want of a better explanation they are sometimes spoken of as sling stones.
 4. Small thick irregular forms, generally rudely flaked all over, often terminating at both ends in a rude point (Fig. 5, No. 10). These are very numerous, especially in black chert.
 5. Thick but more regular forms than the preceding, flaked all over, trimmed along both sides and ending in front in a point (Fig. 5, Nos. 11, 12).
 6. Straight-edged grattoirs, with abrupt flaking at the scraping end (Fig. 6, No. 23).

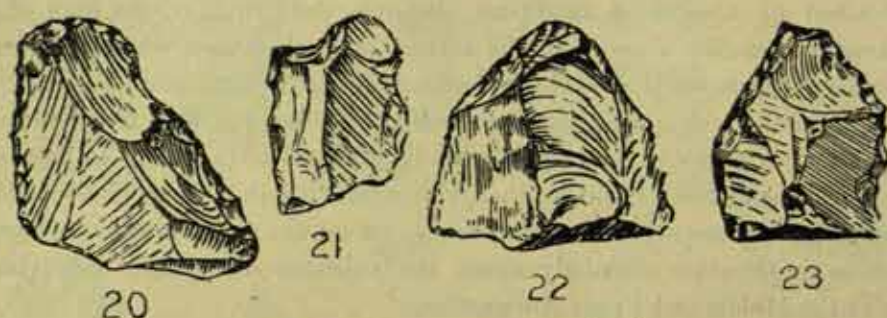


FIG. 6.—MOUSTERIAN IMPLEMENTS ($\times \frac{1}{2}$).
(These are all in black chert.)

7. Straight-edged grattoirs, with one or more concave notches (Fig. 5, No. 9). These pass into the next variety (No. 8).
8. Rostrate grattoirs, sometimes resembling the Aurignacian implement of the same name (Fig. 6, No. 21), sometimes with the beak more fully developed (Fig. 5, Nos. 6, 8).
9. Short scrapers, not thick, with concave notches which when they occur side by side give rise to points, such as might be used for scratching or boring (Fig. 5, No. 7). It may be observed, however, that in this as in many similar cases it is the concave notch which shows most evidence of wear and tear. In one instance (Fig. 5, No. 17) we have a scraper with two of these points.
10. Various forms of racloir (Fig. 5, Nos. 3, 16, 18; Fig. 6, No. 22).

PSEUDO-MOUSTERIAN.

The implements included under this term closely resemble the Mousterian but bear traces of Aurignacian workmanship and may be referred to that age. Of the numerous examples in our collection we may especially mention the following:—

1. *Racloirs*.—Thin flakes often resembling in general form the Mousterian

point, with minute marginal retouches, producing a finely serrated edge (Fig. 7, Nos. 27, 30); some of these flakes bear a positive bulb on one side and a negative bulb on the other, showing they were not the first to be struck off the nucleus (Fig. 7, No. 31): some are abruptly retouched over a part of the periphery (Fig. 7, No. 26).

2. *Simple grattoirs*.—Short thick flakes with a straight edge.

3. *Rostrate grattoirs*.—Boldly flaked into form with lamellar flaking on the snout and a well-marked anterior notch. Sometimes abruptly flaked at the base.

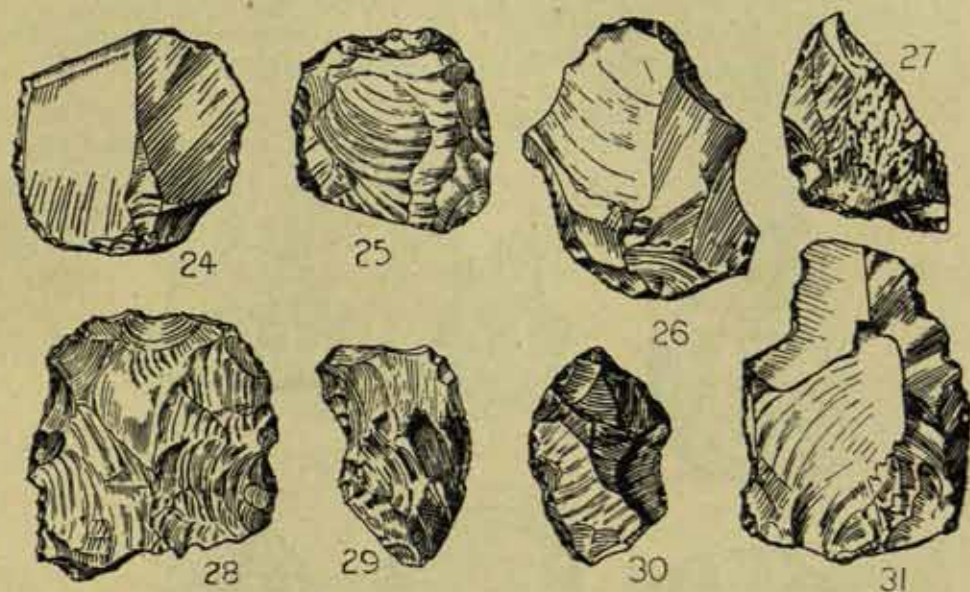


FIG. 7.—PSEUDO-MOUSTERIAN IMPLEMENTS ($\times 2$).
(These are all in flint.)

4. *Universal tool*.—A flake of medium thickness ending in a grattoir at one extremity and a point at the other, with a convex edge retouched to form a racloir on one side and a concave edge retouched to form a concave scraper on the other (Fig. 7, No. 29).
5. Large fragments of flakes remarkably uniform in thickness and with equally remarkable flat scaly flaking over the whole surface; this flaking is as tangential as the Solutrian but never gives rise to long narrow channels (Fig. 7, Nos. 25, 28).

AURIGNACIAN.

The implements of this age, here as everywhere, are distinguished by a rich variety of form. Such a multifarious equipment of tools implies that the workman exercised his skill in many different handicrafts. The worked bone and ivory to

be described later support this inference; they show that the Aurignacian hunter was already familiar with the principle of the saw, the graver, the spokeshave, racloir, grattoir, and drill; but much of his work was accomplished on perishable material, and he probably produced a whole host of objects—spears, bows and arrows, digging sticks, thongs of hide, fur garments, basket work and nets—of which no trace has been or could be preserved. For some of his implements we are unable to assign a use.

The oldest of the Aurignacian implements from Paviland are:—

1. A variety of the carinate grattoir. The typical *grattoir caréné* or *grattoir Tarté* is thick and short, with a flat surface below, and a regular flaking on the sides, especially in front, produced by detaching comparatively long, thin, narrow lamellæ which ran parallel or with slight convergence from below upwards. When the lower face is worked large flakes are taken off to produce a flat base. The examples represented (Fig. 8, Nos. 32, 32a,

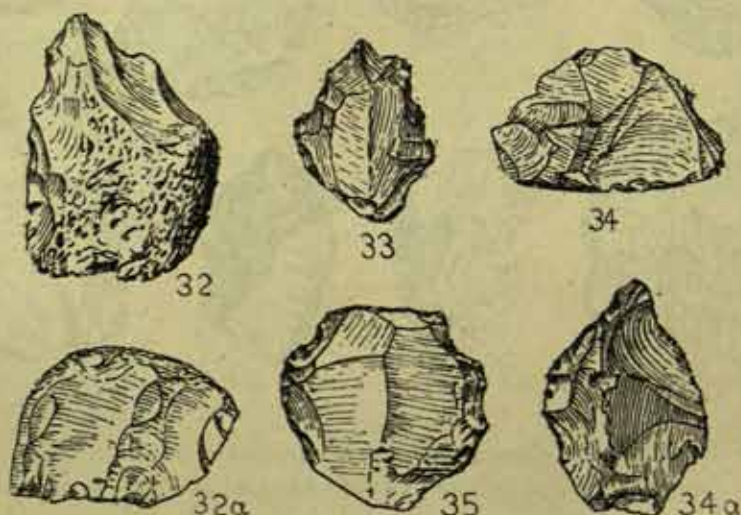


FIG. 8.—THE OLDEST AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).

(These are all in flint. The right-hand extremity of No. 34 is the top of No. 34a.)

- 33, 34, 34a) answer to this description, but are ruder in shape and less elaborately flaked than in the true *grattoir caréné*, to which they may have given rise, or from which they may have been derived.
2. *Nucleiform grattoir*.—This is a thick scraper related to the preceding, but not provided with a keel (Fig. 8, No. 35).
3. *Atypical racloir*.—This is a roughly chipped oval flake.

MIDDLE AURIGNACIAN.

The Aurignacian style of working in flint attained its fullest expression in this period: the certainty and elegance of the retouch is admirable, and the extreme

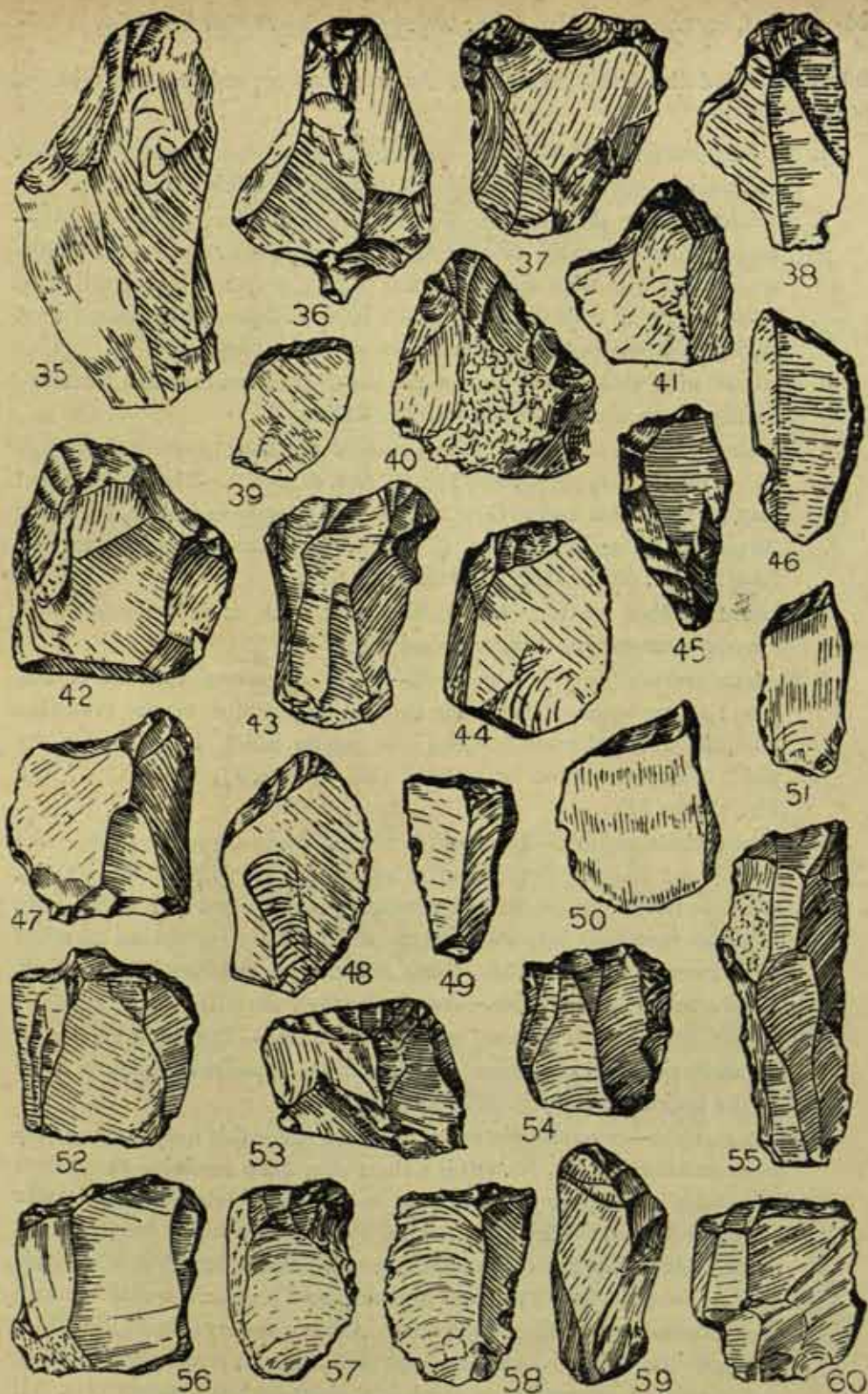


FIG. 9.—MIDDLE AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).

(Nos. 35, 36, 42, and 43 are in Carboniferous chert, Nos. 37 and 55 in Cretaceous chert coloured with glauconite, the remaining specimens are in flint.)

differentiation of the forms shows that the workman appreciated the value of specialized tools.

1. Nucleus grattoir.—This is a nucleus which, as so often happens, has been utilized as a grattoir. Similar forms occur in Neolithic deposits.
2. Straight grattoir (Fig. 9, Nos. 45, 53, 54, 58, 60; Fig. 11, Nos. 73, 74).—Rather thick, generally tabular, flakes, rectangular or square, not unlike a gun flint, with wide abrupt lamellar flaking, perpendicular to the edge. Professor Breuil adds that Nos. 54, 58, 60 and 73 present a salient lateral angle which was certainly intended for a definite purpose.
3. Grattoir with oblique terminal retouches.—This differs from the preceding mainly in the direction of the lamellar flaking.
4. Terminal grattoir, or grattoir at the end of the flake (*grattoir sur bout de lame*) (Fig. 9, Nos. 49, 55, and Fig. 10, Nos. 61 to 65).—The scraping end may be rectilinear and oblique, with a lateral angle as in Nos. 49, 55, or curved in an arc as in Nos. 61 to 65. The flake may be a long thin lamella (No. 63), or short and thick (No. 61).
5. Straight notched grattoir (Fig. 9, Nos. 47, 52).—A straight grattoir with a concave excavation at the terminal edge.
6. Rostrate grattoir (*grattoir à museau*).—There are several varieties of this form; a very common one seems to be closely related to the preceding form, the terminal notch bringing into greater relief one of the corners which forms the snout or rostrum (Fig. 9, Nos. 37, 38, 40, 41, 57, and Fig. 11, No. 71).
7. Ogival rostrate grattoir.—The snout is more developed, and the plan of the rostral end has the form of an ogive arc (Fig. 9, Nos. 35, 36, 42, 43). (This is a form which, so far as I remember, is rather peculiar to Paviland. It passes insensibly into another type which closely approaches a kind of burin: compare Nos. 34, 34a, oldest Aurignacian, and Nos. 37, 41, 44, 49, and 50, middle Aurignacian.—*Note by Professor Breuil.*)
8. Rostrate grattoir with inverse terminal retouches.—The retouches are on the underside of the rostrum, and slope in the opposite direction to those on the ordinary form (Fig. 9, Nos. 39, 44, 48).
9. Short grattoir.—Several varieties are included under this form. One of the most striking (Fig. 11, No. 68) is a short thin flake retaining the bulb of percussion on its plain under surface, and minutely retouched by regular oblique flaking at the front end to form a circular arc with a finely serrated cutting edge. The fine oblique flaking recalls some Solutrian and Neolithic work. I doubt whether this was intended for a scraper, it would be much more efficient as a cutting implement. Another variety (Fig. 11, No. 67) is a thicker oval flake with rather abrupt retouching all round the periphery, and a pointed extremity; a third is a short-beaked grattoir (Fig. 11, No. 70) with oblique lamellar retouches.

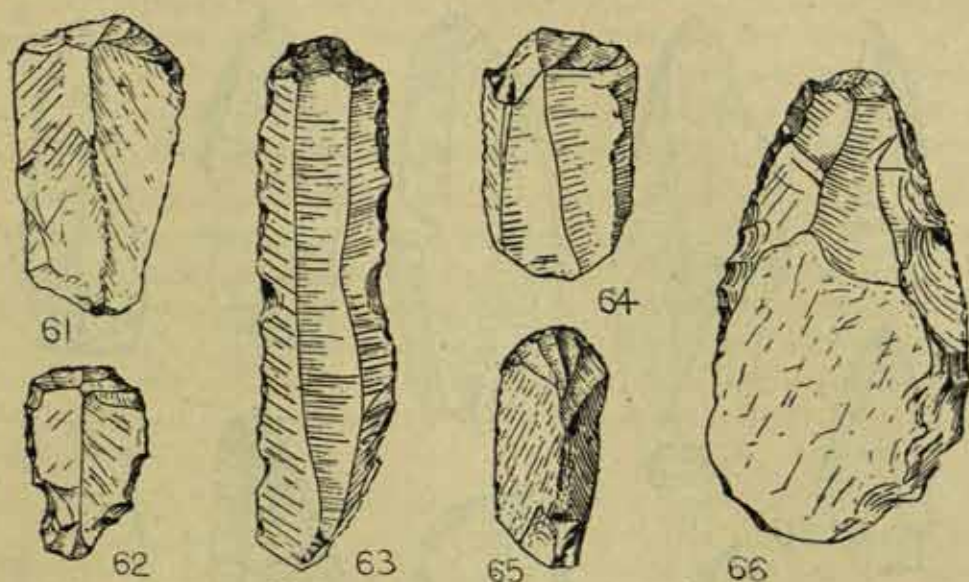


FIG. 10.—MIDDLE AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).
(These are all in flint.)

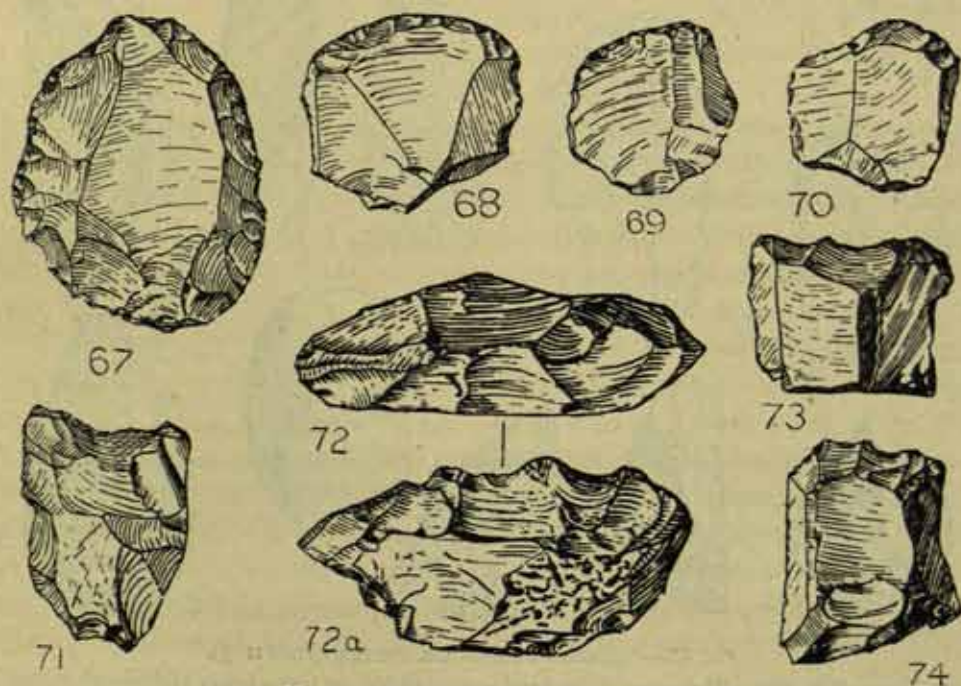


FIG. 11.—MIDDLE AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).
(These are all in flint, except No. 72, which is in black chert.)

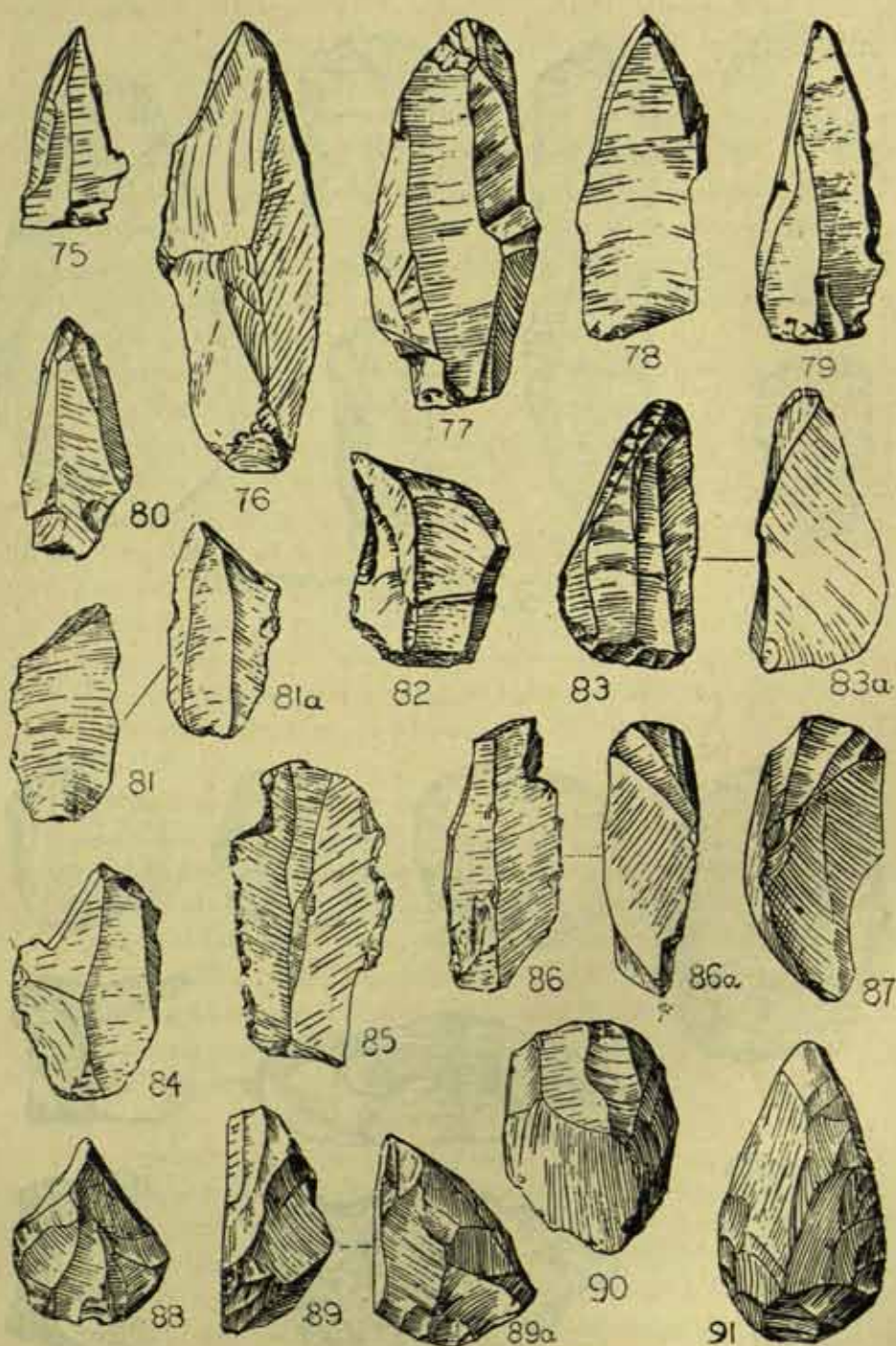


FIG. 12.—MIDDLE AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).

(These are all in flint. The upper right-hand corner of No. 86 is the lower right-hand corner of No. 86a. No. 85 is inverted. No. 91 is in the Swansea Museum.)

10. Flakes with terminal inverse oblique retouch (Fig. 9, Nos. 46, 50, 51).—These resemble burins, and Professor Breuil writes: "I am not sure that they are not lateral burins, Nos. 50 and 51 at all events."
11. Double racloir (Fig. 10, No. 66).—Racloirs are extremely rare among our Aurignacian implements: this is one of the best examples and, as Professor Breuil remarks, it is entirely devoid of any Mousterian aspect.

One of the most characteristic implements of the later Aurignacian industry is the burin, which is distinguished by its strong, short cutting edge. It was by no means exclusively employed for engraving pictures or carving in the round,¹ but probably served a variety of purposes; it would be very useful for cutting thongs out of hides, and it was almost certainly the implement with which strips were cut out of reindeer's horn or ivory. The process in this case was to score two parallel grooves in the substance, and to deepen them till they met. The following varieties were found:—

1. Simple burin (*burin en bec de flûte*).—This is the classic burin of the Magdalenian age, but it is common enough in the Aurignacian also. The edge, which is perpendicular to the plane of the lamina, is formed by two faces which meet in an acute dihedral angle. In its typical form each of these faces is simple (Fig. 12, Nos. 75, 76, 78, 79), but not infrequently one or both may be composed of several facets, and in this case the form may differ sufficiently from the simple burin to deserve a separate name; as Mr. Henry Balfour pointed out to me, it seems to have served some other purpose; perhaps we might call it a spatulate burin (Fig. 12, Nos. 77, 83, 83a).

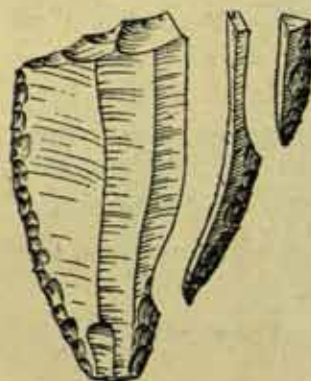


FIG. 13.—Diagram to illustrate the manufacture of a lateral burin and the method of renewing its edge. (After the Abbé Bouyssonie and Bardon.)

2. Lateral burin (*burin d'angle* or *burin laterale*).—This is essentially a flake with a distal truncated end, which is more or less transversely retouched. Its sharp corner might be used for graving without further modification, but in order to strengthen the edge a spall is split off, leaving a longitudinal facet which intersects the truncated end (Fig. 12, Nos. 84, 85, 86). When the graving edge is blunted by use it can be renewed in various ways, as by taking off a second spall parallel to the first (Fig. 13) or by retouching the truncated end, or even by removing the whole of this end by a transverse fracture. All these methods were employed, but

the last named had the disadvantage of unduly shortening the implement. Some specimens show by the step-like outline of the burin face that

¹ Note by Professor Breuil.—The burin was used for working in bone and ivory much more than for engraving.

the edge had been several times renewed. The little spalls struck off are preserved in the cave deposits and may be recognized by their form, retouching and worn edges. In some cases (Fig. 12, No. 80) a pair of notches near the base seem to have been intended for a ligature to secure the burin to a handle. (*Note by Professor Breuil*.—Nos. 80 and 82 are not very typical lateral burins.)

3. Lateral burins with inverse retouch (Fig. 12, Nos. 81, 81*a*).—Professor Breuil remarks: "This is no doubt a spatulate burin, but more lateral than usual. The greater part of the spatulate and beaked burins from Paviland show a marked tendency towards inverse retouch." My friend, Mr. Miles Burkett, has called my attention to the prevalence of a similar retouch in the Aurignacian Station of La Bertonne (commune of Peujard, Gironde); it is described by M. François Daleau.¹
4. Beaked burins (*burins busqués*).—The graving end is formed by a flat facet below on one side and an arched surface with parallel lamellar flaking on the other (Fig. 12, Nos. 86, 87). The edge is renewed by flaking off the face to form a fresh flat facet. In some examples the back has been hammered down to give a comfortable grip. A specimen in black chert (Fig. 11, Nos. 72, 72*a*) recalls one figured by the Abbés Bardon and Bouyssonie,² from Coimba-del-Bouïtou, the chief difference being that this is single-ended while theirs is double-ended.
5. Round grattoir with opposed burin (Fig. 12, Nos. 88, 89, 89*a*, and 91).—Three of these beautifully symmetrical little implements have been obtained from Paviland, one is in the Swansea Museum and the other two were found during our excavations. One end is a simple burin, the other a circular grattoir with a carefully retouched edge; the under surface is flat, the upper swollen and faceted. Similar forms have been found by the Abbés Bardon and Bouyssonie in the upper hearths of Coimba-del-Bouïtou.³
6. Lames or flakes variously retouched.—These include forms with oblique terminal retouch, some with a notch on one side.
7. Finally, and quite atypical, are long flakes in flint and chert without retouch or definite signs of use.

UPPER AURIGNACIAN.

Many of the forms already described from the Middle Aurignacian are repeated here but they are usually distinguished by less careful retouching.

¹ F. Daleau, "Silex à retouches anormales," *Actes de la Société Archéologique de Bordeaux*, 1910, tom. xxxi., pp. 18, pls.

² L. Bardon, A. and J. Bouyssonie, *loc. cit.*, p. 46, fig. 24.

³ *Ibid.*, *loc. cit.*, p. 49; Fig. 26, Nos. 60 and 61.

The characteristic implement of the sub-division is:—

1. The Gravette point (Fig. 14, Nos. 92 to 97. Nos. 96 and 97 are the pointed extremity broken off).—A long, straight, parallel-sided flake, generally triangular in section, one edge of which has been completely removed by minute and thorough retouching. It differs from the Chatelperron point of the Lower Aurignacian, with which it may be confused,¹ by its greater straight-

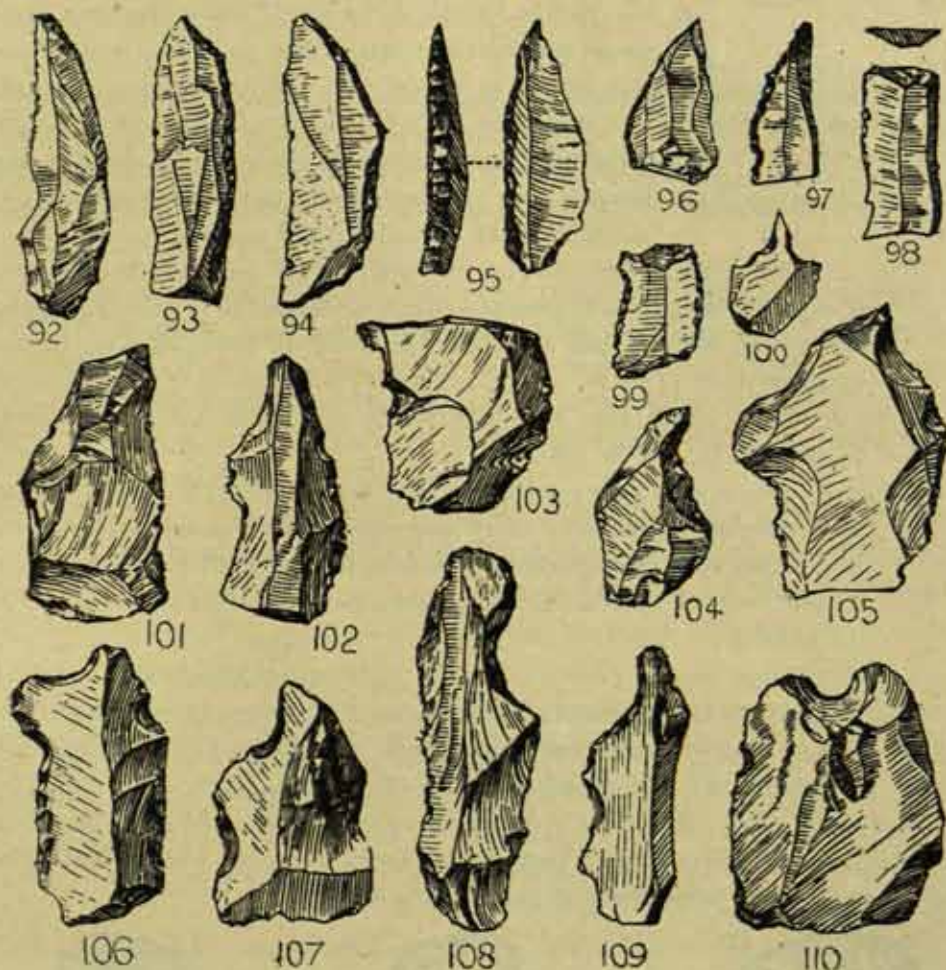


FIG. 14.—UPPER AURIGNACIAN IMPLEMENTS ($\times \frac{1}{2}$).
(Nos. 106 to 110 are in Carboniferous chert, all the others in flint.)

ness, elongation and narrowness, as well as by its more acute point. There is a difference also in the retouch, which is more regular and finer in the Gravette point, and is almost constantly directed from below upwards. In the Chatelperron point it sometimes follows this direction, but sometimes the opposite from above downwards. (The flat of the blade is

¹ H. Breuil, "Les Subdivisions du Paléolithique supérieur et leur Signification," *Compte Rendu de la XIV^e Session, Genève, 1912, Congrès International d'Anthropologie* tom. I, p. 165; see in particular Fig. 1, Nos. 6 to 9.

regarded as the lower surface, the longitudinally faceted side as the upper surface.) In all our specimens the direction is from below upwards: most of them show signs of use on the cutting edge. However acute the point, and in some cases its sharpness is extreme, the retouch is always continued along the back right up to the extremity.



1



2

FIG. 15.—Minute implements or microliths (nat. size). 1. resembling a Gravette point, but without a cutting edge. 2. A spokeshave or borer. Both are in flint.

As shown by the Abbé Breuil,¹ the Gravette point passes into minute forms at Font Robert (Corrèze) and this appears to be the case also at Paviland. Among the specimens collected by Dr. Cunningham is one beautiful example (Fig. 15, No. 1); small as it is, the retouch is no less perfect and is carefully maintained throughout the whole length of one side.

The Abbé Breuil calls my attention to the tendency to assume a triangular form which is presented by Nos. 94 and 96 (Fig. 14): a point of interest, since it has also been observed at Grimaldi and in the neighbourhood of Brive.

2. Some similar little thin knife-like flakes occur but with a truncated extremity (Fig. 14, No. 98).
3. Borers (*perçoirs*).—Numerous flakes have been trimmed in such a manner as to produce one or more sharp projections, which served probably for perforating skins or boring holes in wood or ivory (Fig. 14, Nos. 100 to 105); one of these borers (No. 102) resembles a form described from the Grotte du Trilobite.
4. Spokeshaves (*coches diverses*).—A few of these notched flakes (Fig. 14, Nos. 106 to 110), resembling those from the Upper Aurignacian of the Grimaldi caves, have been chipped out of chert.² A microlithic form occurs in Dr. Cunningham's collection (Fig. 15, No. 2).

Numerous small flakes occur, Aurignacian in age, which could never have been retouched in their present state; they are no doubt the worn ends of burins and scrapers which have been struck off to renew the edge.



111



112



113



114



115

FIG. 16.—SQUAMOUS FLAKES (*Précis esquillées*).
(All these are in flint.)

¹ *Loc. cit.*, Fig. 1, Nos. 18 to 23.

² H. Breuil, *loc. cit.*, p. 179, Fig. 11, Nos. 1 and 6 to 10.

Squamous flakes.—These curious forms (Fig. 16, Nos. 111 to 115), which are found so commonly in the Aurignacian, extend upwards into the Magdalenian and Azilian. Here they are no doubt Aurignacian and probably belong to the middle subdivision. The Abbé Breuil remarks that they are instruments broken by some very violent usage which he does not understand.

SOLUTRIAN.

The approach of this age is heralded by a number of Proto-Solutrian implements distinguished by a new style and technique, markedly different from any that preceded them, but destined to a long development, which reached its highest perfection in some of the Neolithic achievements of Egypt or the still more recent triumphs of South America.

1. Tanged stylet (*pointe à soie*).—Two fragments (Fig. 17, Nos. 116, 119) represent one the tanged end (No. 116) and the other the pointed end (No. 119) of a triangular stylet; these are not unlike some forms described by the Abbés Bardon and Bouyssonie from the Grotte de la Font Robert,¹ but they are on a larger scale. The flaking is Solutrian in character but comparatively rough.
2. Laurel-leaf point (*pointe en feuille de laurier*).—This leaf-like lamina, in dark green chert, is faintly channelled on one side by thin lamellar flaking which just skims across the surface (Fig. 17, Nos. 118, 118a). It is keeled on the other side, and this character distinguishes it from the genuine Solutrian implement.
3. Parallel-sided point.—A well-pointed weapon (Fig. 17, No. 122), flat on one side, convex and flaked all over on the other; the proximal end is broken off. This is preserved in the collection of the Swansea Museum.
4. Razor blades.—These are triangular in section like a common razor; one side is without retouches, the other flaked all over in characteristic Solutrian style; the flakes were started from the back where it meets the side and propagated across to the cutting edge. One example is complete (Fig. 17, No. 117); another (Fig. 17, No. 115) is a fragment of a much finer blade, thinner and with surprisingly beautiful channelling; a third (Fig. 17, No. 120) is not retouched except on the back, which is crossed by channelled flaking.
5. A universal implement.—This (Fig. 17, No. 121), which at first sight seems to be merely a fragment, is a complete implement. It may be regarded as a razor blade which narrows to a dressed point at one end and expands and thickens to form a grattoir at the other.

¹ L. Bardon, A. and J. Bouyssonie, *La Grotte de la Font Robert*, Brive, 1908, Fig. 5, p. 11.

The Abbé Breuil states that the forms Nos. 115, 117, 120, and 121 are not Proto-Solutrian; this is shown by the direction of the retouch.

Hammer-stones of Upper Palæolithic age.—Among the stone implements which cannot be assigned to any particular horizon are two small pebbles, bearing the marks of use. They were selected not without judgment to serve as hammers; the material of which they consist is very hard and resistant, in one case

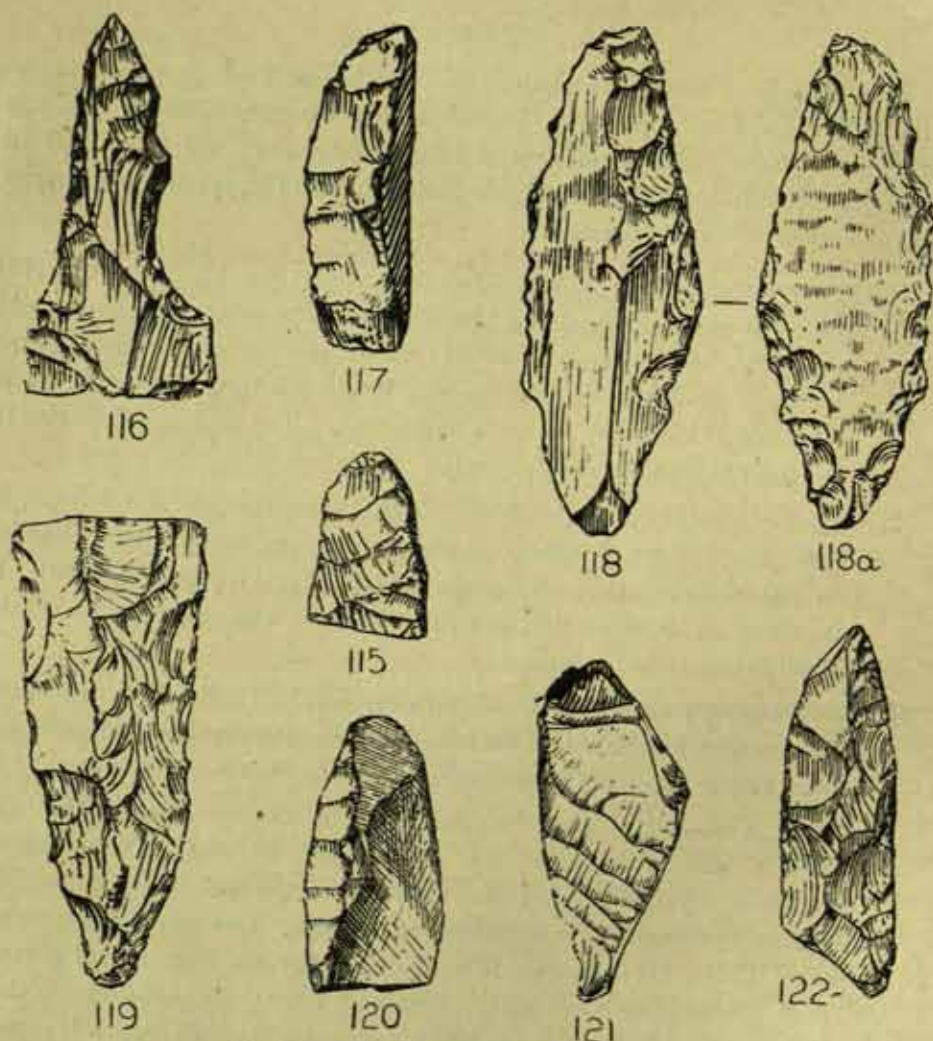


FIG. 17.—PROTO-SOLUTRIAN IMPLEMENTS ($\times \frac{1}{2}$).

(These are in flint, except No. 118, 118a, which is in dark green Carboniferous chert.)

a silicified breccia, in the other a peculiarly compact hornblende schist; their form is such as to afford an easy and firm grip as well as good striking ends, which are now much bruised by use.

In one of these specimens (Fig. 18) the rounded and bruised ends are extended in planes at right angles to each other, and there is a depression in the middle

which gives a convenient hold whichever end may be used: by simply turning it round it can be made to strike with either edge, horizontal or vertical.

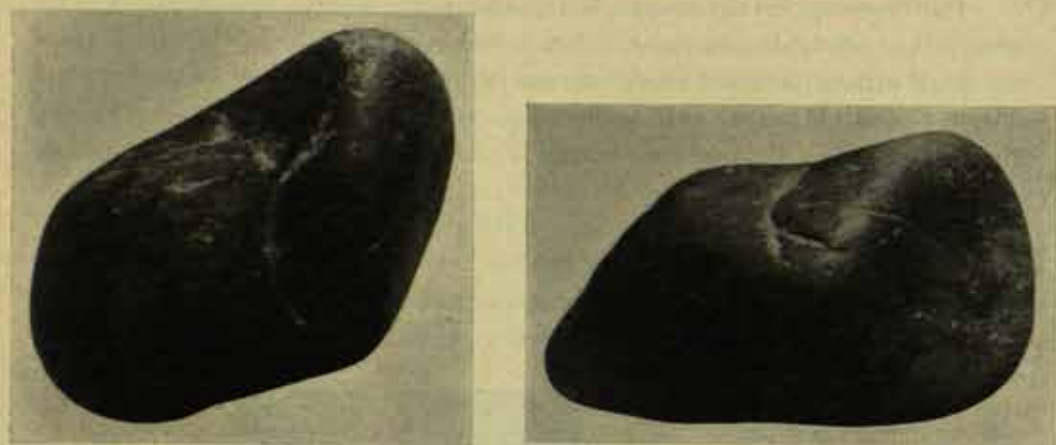


FIG. 18.—HAMMER-STONE (NAT. SIZE).

A hammer-stone with the edges at each end in planes at right angles to each other. One figure passes into the other by rotation about a longitudinal axis in the plane of the paper through 90° .

There is a third hammer-stone of black flint which has been chipped into shape; it is much bruised on the striking surface.

MINERALS.

The cave men were evidently not unobservant of the properties of stones and minerals. In their choice of stones for implements they were guided by expert knowledge; they knew where to look for red ochre and had already recognized its value as a pigment; but they also showed a curious interest in minerals which they could not apply to useful purposes. Thus among the minerals brought into the cave are numerous fragments of psilomelane, one weighing nearly a kilogram; a hydrate of manganese allied to pyrolusite is also present, and there are besides specimens of lignite, fibrous hematite or kidney iron ore, pseudomorphs of hematite after calcite, mammillated limonite, and a broken crystal of pure quartz. The pyrolusite might have furnished a black pigment, but not the psilomelane, which probably excited attention by its strange heaviness, as the lignite by its equally strange lightness; the iron ores were probably found in association with the red ochre and were collected as curiosities.

The quartz crystal was probably treasured for its magic powers: it recalls the practice so common among the medicine men of most existing primitive tribes, especially the Australians, of conjuring such crystals out of the bodies of their patients with the object of effecting a cure.

PATINATION.

We have already called attention to the remarkable dead-white patination of the flint implements, a character which they possess in common with a great number of others found elsewhere, especially in cave deposits.

The question of patination has not as yet, I believe, been so closely studied as it deserves.

The first step in the process is the removal in solution of a part of the flint from a more insoluble remainder, which is thus rendered porous. When the pores are filled with air the difference between the refractive index of this medium and the flint is so great that the incident light is scattered and absorbed. Thus the flint and its patina differ in their reaction to light in precisely the same manner as ice and snow.

It is easy to obtain very thin laminæ of flint, suitable for microscopic examination, by striking off flakes with a hammer: even flakes affording a transverse section across the flint and its patina together may be obtained in this way. If these be immersed in an alcoholic solution of some aniline dye and then well

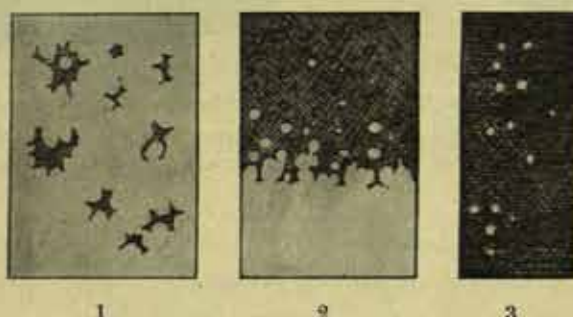


FIG. 19.—PATINATION OF FLINT ($\times 40$).

The white patina is represented by the dark, cross-hatched, areas.

No. 1. Surface of a flint after digestion with concentrated ammonia solution at a temperature of about 140° C. for twenty-four hours.

No. 2. Section of flint and its patina crossing the junction of the weathered and unweathered flint.

No. 3. Surface of a flint with a "blus" patination.

washed with alcohol the weathered crust or patina will be found to retain a permanent stain and the flake, after replacing the alcohol by xylol, may be mounted in balsam for observation under the microscope. Commencing our examination at the junction of the crust with the flint (Fig. 19, No. 2) we shall see the stained material fraying off into the flint in the finest of little threads; a little further in, away from the flint, the stained material forms a close network, enclosing in its meshes the unaltered flint in the form of little globules from about 0.05 mm. to 0.1 mm. in diameter. These strongly recall the chalcedonic globules observed by Messrs. Jukes-Browne and Hill¹ which may be traced in the half-formed flint nodules of the chalk-marl through all stages of transformation from the state of opal to flint.

On finely powdering the weathered crust of our flint implements these globules may be isolated for separate examination. By applying a stain they can be shown

¹ A. J. Jukes-Browne and W. Hill, "On the Occurrence of Colloid Silica in the Lower Chalk of Berkshire and Wilts," *Quart. Journ. Geol. Soc.*, 1887, vol. xlv, pp. 403-420.

to carry with them, often coating their exterior, some of the weathered material, which in rare instances is found, by examination between crossed Nicols, to be isotropic, and, therefore, in all probability, some form of silica hydrate.

The amount of flint which may be removed in the natural process of patination is considerable. A flake which had weathered through its whole thickness, as was proved by breaking it across, was first weighed and then placed in melted paraffin till the contained air had been entirely replaced, it was next removed and allowed to cool; after cleaning the surface, to remove all adhering paraffin, it was again weighed and the difference in weight afforded a means of determining the volume of the pores which had been produced by weathering. The result in one instance was 25 per cent., in another as much as 31 per cent. of the whole flake.

The white crust is evidently a residual effect of solution, but the patina is something besides. Its outermost part is an extremely thin impervious film or skin, perforated here and there by a few minute holes only. The presence of this skin may be most readily proved by breaking a weathered flake across and immersing it first in a solution of ferric chloride and then, after washing, in a dilute solution of ammonia; red ferric hydrate is at once precipitated on the fractured surface, but elsewhere, under the natural skin, the yellow ferric chloride is seen to remain unchanged, except at a few pin-holes, where a little ammonia enters and forms a slowly expanding circular area of ferric hydrate. Similarly when a fragment is placed in melted paraffin, the emission of air as the paraffin enters is confined to the pin-holes and the broken extremity.

It is to the presence of this skin that the patina owes what little lustre it possesses.

Its formation is the second step in the process of patination. The solution of silica which is formed within the crust is concentrated by evaporation at the surface, deposition follows and continues till the superficial pores are so completely obliterated that nothing can enter or leave the flint except by a few remaining apertures.

We have here much the same phenomenon as that presented by the well known "desert varnish."

The existence of a superficial layer has already been recognized by Renard and Klement,¹ who speak of it as a "more compact" patina composed of crystalline silica. The inner patina is said to be opaque, the outer a colourless silica with little ramifications of the inner substance extending into it. This is not quite the same structure as that here described for I have not been able to distinguish the "skin" under the microscope, its existence can only be shown by indirect methods. Renard and Klement, on the other hand, were able to separate their superficial layer from the inner patina and to analyse it. Such a thick outer layer, sometimes more than 5 mm. in thickness, forms, however, the exterior of the weathered crust of many chalk flints, and is, of course, immensely more ancient than any patina on human implements.

¹ Renard and Klement, *Bull. Ac. roy. Belgique*, 1887 (3), xiv, p. 773.

The whiteness of the patination in our Paviland flints is conditioned, not only by the primary cause already pointed out, but also by its thickness and the absence of pigment. There are other patinas which Dr. Allen Sturge distinguishes as "blues" and "reds." The blue is obviously an incipient patination, in which the merest film of weathered material is drawn over a background of black flint. The red patinas are due to the presence of ferric oxide or hydrate: this has been denied. I therefore placed some flints bearing the red patina¹ in a solution of nitro-hydrochloric acid; this completely removed the colour, and on neutralizing the solution with ammonia, ferric hydrate was precipitated. To complete the proof the bleached flints were introduced first into a solution of ferric chloride and then of ammonia, when the original red tint was restored to the patina.

Archaeologists have sometimes hoped or imagined that it might be found possible to estimate the age of an implement from the thickness of its patina, and my friend Professor Joly has even made experiments with this object. It is possible that a method may be devised which will be applicable in special cases but not, I think, universally.

Patination proceeds very slowly. We may gain some general idea of its rate by determining the thickness of the patina produced in an estimated period of

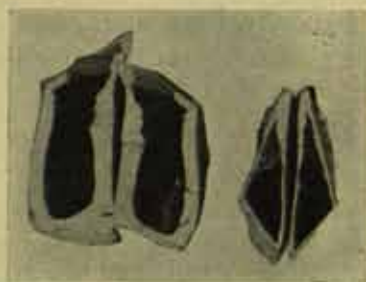


FIG. 20.—Two Aurignacian flint implements broken across to show the weathered crust, and the difference in its thickness in different examples. (Nat. size.)

time. The thickness may easily be found by breaking our implements across and measuring the white crust under the microscope (Fig. 20); observations on seventeen of our specimens gave an average of 1.36 mm. The age of the Aurignacian is unknown, but I doubt if any archaeologist would regard 13,600 years as an excessive or even adequate estimate; accepting it for the sake of illustration we obtain $1.36/13,600 = 0.0001$ mm. per year as the average rate of formation. This, however, is merely an average based on thicknesses which vary over a wide range, from 4.1 to 0.15 mm. or even to zero, for there are some varieties of flint

which do not weather perceptibly at all: this is particularly the case with a dense black flint which traverses the white surface of some deeply weathered specimens in a conspicuous band and does not present even a blue patination nor any loss of lustre. Thus the rate of patination depends in part on the constitution of the flint, a variable factor. It also varies with external conditions; thus it is not the same even for different sides of the same specimen, in one case, for instance, the thickness of the patina on one side is 0.3 mm., on the other 0.9 mm., in a second 0.75 mm. and 1.8 mm. Here the difference depends upon aspect; A. de Mortillet has given

¹ I have to thank Dr. Allen Sturge for these and other interesting examples of weathered flints. His views, even when we differ from them, are always stimulating and suggestive.

another example which shows how the rate is affected by the different conditions which prevail in different parts of the cave; he describes a laurel-leaf point which had been broken into four parts and scattered through the cave earth, so that when found they were lying remote from one another; they present different patinas, three of them are grey, the fourth is white and deeply weathered.

The solvent agent on which the weathering depends has not yet been identified. Water alone may produce some effect, but evidence is lacking; observations on old flint walls exposed to the rain might throw some light on the subject, but the walls would need to be very ancient. The oldest I have examined was one in Winchester College facing the rainy quarter and built A.D. 1394, or 520 years ago. In this interval weathering at the average rate already supposed would have extended inwards for 0.05 mm., and have produced a perceptible result; but considering how great a number of flints were exposed to observation we might perhaps take the maximum rate as applying to some of them and this would give a thickness of 0.15 mm., yet no trace of patination could be anywhere discerned: there was no sign of a bluish film, nothing beyond a slight loss of lustre. This would seem to suggest that water alone is inadequate to account for the whole of the phenomenon, and we are led to assume the influence of some dissolved ingredient. In the water percolating through the cave deposits calcium dihydric carbonate occurs in considerable quantity and it is not impossible that it may play the part required. The only other likely substance is ammonia. At Paviland ammonia is present in the cave earth; when digging I was often surprised at the rich ammoniacal odour which filled the air; it is evolved from the animal matter of the bones which are still in course of decomposition. The effect of ammonia on silicates may be observed on old glass windows situated over stables or on the glass of ammonia bottles in a laboratory; it is very marked and strengthens the suspicion that the patination of flints may be produced by the same reagent.

To determine this point I exposed three fragments of flint to the action of a concentrated solution of ammonia in a sealed tube which was heated to a temperature not exceeding 140° C. for 24 hours. On removal from the tube they were washed first with hydrochloric acid and then with water. After drying they were all found to have suffered some loss of lustre and one in particular had been very definitely etched. On examining this specimen under the microscope the whitened part was seen to have the form of a delicate broken network with circular meshes filled with the unaltered flint (Fig. 19, No. 1). The same kind of effect is produced by natural weathering, as may be seen by examining the surface of a flint with a blue patina in the region where the patina fades away into the unaltered part, but in this case the network is more complete and more diffuse (Fig. 19, No. 3). The appearance is indeed just such as our examination of sections of the fully weathered crust would lead us to expect, the circular areas of unaltered flint corresponding with the globules we have already mentioned. Chalcedony treated in the same way is also etched, the part attacked being interstitial to the crystalline fibres.

The experiment affords proof of corrosion, but not necessarily by ammonia,

for water alone heated up to 140° C. exerts a corrosive action on silicates. It was therefore necessary to make a control experiment, and some fragments of flint were heated in water up to this temperature for 48 hours in a sealed tube. The glass tube was corroded by this treatment, but not the flints. The experiment, however, is not decisive, since some flints yield so much more readily to solution than others.

I have also exposed freshly fractured flint to the action of a concentrated solution of ammonia for the space of six months under atmospheric conditions of temperature and pressure, but without result: a similar experiment, made with a decomposing organic solution which evolved ammonia freely, was equally fruitless.

If we wish to probe the question of patination deeper we must endeavour to obtain some clear ideas on the constitution of flint. As early as 1833 Fuchs proposed to regard flint—and chalcedony, which only differs from it by possessing a fibrous, instead of a granular structure—as a mixture of crystalline silica or quartz and colloidal, or, as he termed it, “amorphous” silica, *i.e.*, opal. Later Rose controverted this view, alleging, erroneously, that flint and chalcedony are indetical in all their most important characters with quartz. The subject was then reinvestigated by Rammelsberg, who confirmed the observations and supported the conclusions of Fuchs, but at the same time showed that the amount of silica dissolved by alkalis out of flint is far in excess of the quantity of amorphous silica which can be present in it, a result which was afterwards emphasized by Renard and Klement, who dissolved as much as 86 per cent. out of a chalk flint containing 97.5 per cent. of silica. These observers also investigated the problem with the aid of the microscope and came to the conclusion that flint consists of amorphous silica intercalated in infinitesimal particles between crystal grains, some which have the character of “chalcedony.”

That one of the constituents of flint is a hydrosol of silica can, I think, admit of no doubt. It is not common opal, for that would be readily detected by staining reagents; in all probability it is some form of hyalite.

The effects of heat, long ago observed by Ehrenberg, afford decisive evidence on this point. A simple experiment is to place some thin flakes of flint in platinum foil and then expose them to the hottest part of a Bunsen flame. They do not decrepitate under this treatment, nor is any “crackling” produced, such as results when larger fragments are placed in a fire; but they completely lose their translucence and acquire a uniform dead-white colour. Chalcedony treated in the same way affords the same results. As a control experiment quartz may be calcined; it will be found to remain absolutely unaffected. The whitening is, of course, accompanied by the loss of water.

The calcined flakes may be mounted in aniseed oil and examined under the microscope; they retain their whiteness when illuminated by reflected light, but by transmitted light the whiteness gives place to brown, indicating the presence of a finely porous material like opal. Add to this the significant fact that between crossed Nicols the flake presents precisely the same crystalline granular appearance

that it had before ignition,¹ and we perceive at once that the flint must consist of two substances, one which is decomposed by heating with the liberation of water—probably hyalite—and another, which suffers no change.

It is tempting to regard this less alterable substance as quartz. A mixture consisting of one part of hyalite (having a specific gravity of 2.1 and containing 6 per cent. of water) and five parts of quartz, would have a specific gravity of 2.57 and contain 1 per cent. of water; one consisting of one part of similar hyalite and 12 parts of quartz would have a specific gravity of 2.61 and contain 0.46 per cent. of water. But the specific gravity of flint ranges from 2.57 to 2.62, and it contains about 1 per cent. of water. Such a mixture would also explain the optical characters of flint so far as they can be observed, and its remarkable solubility in alkali solutions is stated by Rose to be no greater than that of powdered quartz.

Yet I am by no means convinced that the second substance is actually quartz. Michel Lévy and Meunier Chalmas,² in a masterly study of the crystalline constituent of chalcedony, have shown that it differs from quartz by possessing two optic axes and a birefringence of between 0.009 and 0.01. I have repeated their observations using chalcedony which had been ignited in the blowpipe flame, and obtained similar results. I have also tried to isolate this constituent, hoping to free it from hyalite by treatment with potash or hydrofluoric acid, but none of my attempts have met with success. The effect of hydrofluoric acid on chalcedony is not so much to isolate the crystalline fibres as to corrode the zones of growth, some of which it dissolves more rapidly than others.

There is room for further investigation, but we may conclude from the foregoing that flint consists of two constituents, one a hydrosol of silica and the other a crystalline form of silicon dioxide. In the process of patination the hydrosol is first attacked, afterwards the crystalline constituent. It is possible that the latter is first hydrated and then dissolved; in any case it is so finely divided as to yield comparatively rapidly to solvents.

The Carboniferous chert differs considerably from flint, it rarely becomes patinated, and some of the purer almost colourless varieties are more coarsely grained and possess a higher specific gravity (2.65). They probably consist entirely of quartz.

IMPLEMENTS OF BONE AND IVORY.

Bits of worked ivory were turned up by the spade in great numbers, but most of them were so soft and full of water that they crumbled at a touch; some,

¹ This fact is so important that I have repeatedly heated flint flakes to the highest temperature attainable with a Herepath blowpipe, but in all cases the crystalline constituent remained unchanged.

² Michael Lévy and Meunier Chalmas, *Bull. Soc. Française de Minéralogie*, 1892, tom. xv, pp. 159–190, pls. These distinguished investigators have not taken sufficiently into account the influence of associated silica hydrate on some of the properties of lutécite. The same oversight has led M. F. Wallerand to make some very curious remarks on the relation of quartzine and quartz (*op. cit.*, 1897, p. 52).

however, especially where the cave earth was comparatively dry, were better preserved, and the total number of ivory and bone objects which have been obtained by various explorers from time to time is considerable.

Rods.—Numerous fragments of the ivory rods described by Buckland as lying adjacent to the skeleton, and some found by ourselves in the same part of the cave, are preserved in the University Museum; the longest (Plate XXII, Fig. 2c) measures 99 mm. in length and 9 mm. in diameter, some of the shorter fragments are thicker (13 mm.), some thinner; all that I have seen are abruptly truncated by fracture at both ends, but Mr. H. Balfour found one fragment in Miss Talbot's collection with one end preserved: it is slightly swollen and well rounded off.

The more complete ivory rods found in Aurignacian deposits on the Continent are also, as a rule, broken off at one or both ends; some taper to a point at one end, others to a chisel edge, and these may have been used as arrow or spear points, but there are many which cannot have served this purpose, they may have been bag handles, sinew twisters, netting pins or bow drills, it is impossible to say.

Considering the implements with which they were shaped, these ivory rods are remarkably true to a cylindrical form, and the surface is often so smooth as to suggest that the final touches were given by grinding and polishing. They were worked parallel to the grain of the ivory and consequently have now a great tendency to split longitudinally (Plate XXII, Figs. 2d, 2e).

Awls.—The cave has not yielded any bone needles, which indeed are extremely rare before Magdalenian times, but several well-shaped and finely pointed bone awls have been found from time to time. One (Plate XXII, Fig. 6) is preserved in the Swansea Museum, and two (Plate XXII, Figs. 7 and 9) were obtained during our excavation; one of these was unfortunately broken by accident immediately after its discovery. It is probable that the old-fashioned method of sewing with an awl, which survived in recent times among the Australians, the Indians of the North American plains, and the Bushmen, was generally practised by the Aurignacian people.

Armlet.—The fragments of an ivory armlet found by Buckland are preserved in the University Museum; their curvature on the inside corresponds with a circle 62 mm. in diameter, or about the same as an average-sized silver bangle from Ceylon. The surface is smooth; the transverse section varies in form and thickness, from point to point, as shown in the illustration (Plate XXII, Fig. 12).

Some needless astonishment has been expressed at the industry and patience exercised in carving so slender a ring out of solid ivory. The ancient workman



FIG. 21.

Diagram to show how ivory rings may be obtained from an elephant's tusk.

performed no such feat. The base of the mammoth's tusk is not a solid mass but excavated for the pulp cavity in a hollow cone, and all that is necessary to obtain a ring is to make two parallel cuts with a saw across the tusk in this region (Fig. 21). To remove the edges of this ring with a hollow scraper and to smooth its surface by fine grinding would be a comparatively simple task.

Smoother.—The Paviland collection at Oxford contains a beautiful example (Plate XXII, Fig. 1) of a class of implements which are well known under the name of "lissoirs," in the Aurignacian cave-deposits of France and Belgium.

Buckland describes this as a fragment "nearly of the size and shape of a human tongue . . .," and continues, "its surface is smooth as if it had been applied to some use (by) which it became polished, and by which the scratches of the coarse knife from which it received its shape have been nearly obliterated." It should be pointed out that the implement is not a fragment; a few bits have been chipped off its proximal end, but otherwise it is complete. It measures 87 mm. in length by 40 mm. in breadth, 15 mm. in thickness at the base and 5 mm. at the distal extremity. On each side of the base is an oblique facet, sloping from before backwards and possibly intended to fit the implement to a handle.

Marrow scoops or spatulas.—Two incomplete implements (Plate XXII, Figs. 4, 4a) carved out of a long bone (radius?) are exhibited in the Swansea Museum, one, 124 mm. long, retains the pointed end, and the other, 142 mm. long, the handle end uninjured. A third and perfect example is preserved in Miss Talbot's collection at Penrice Castle (Fig. 22). These implements, which were possibly used as marrow scoops, afford the only instance of decorative carving from Paviland Cave.¹

Perforated teeth.—Three canine teeth of the wolf (Plate XXII, Figs. 11a, 11b, 11c), perforated for suspension at the base, are in Swansea Museum, and two additional specimens were found by us. Besides these two perforated canines of the reindeer were identified by Mr. Henry Balfour in Miss Talbot's collection. They doubtless contributed, along with perforated shells, to form a sort of necklace, such as was commonly worn in Aurignacian times and is still in use among primitive tribes.

Truncated bear's canine.—We found in our excavation a large bear's canine, from which the cusp seems to have been sawn off so as to expose the pulp cavity. It is just possible that this might have been used as a handle, the pulp cavity serving to receive one end of a splinter of flint. Messrs. Capitan and

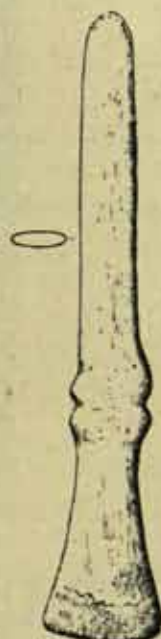


FIG. 22.

Spatula from Paviland Cave preserved in Miss Talbot's collection, from a drawing made by Mr. Henry Balfour ($\times \frac{1}{2}$).

¹ The Abbé Breuil is inclined to think that these objects may be less ancient than the other bone implements. He points out that the bone (cetacean?) of which they consist is not much altered, and that their form recalls some ancient Magdalenian spatulas (described in his paper, already cited, "Les Sub-divisions du Paléolithique supérieur," Fig. 25, No. 4).

Peyrony¹ have described a bear's tooth from La Ferrassie, the root of which is incised all over but especially just below the enamel, and they mention a lion's canine from the Ruth bearing similar marks.

Sawn rib.—The bones obtained during our exploration were sent to Oxford; they were for the greater part in fragments, of which there were many hundreds; they weighed about 300 lbs. After washing each was separately examined for signs of carving or engraving, but without result; the most interesting object which rewarded our search was a bit of a rib about an inch long which had been sawn off the parent bone and which still retains marks of the tool. The saw was first

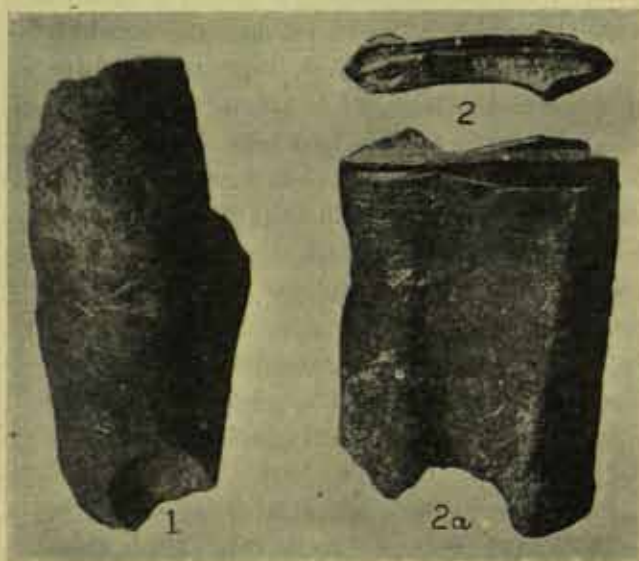


FIG. 23.

No. 1, a bone showing longitudinal striations, due to scraping, and bruised cuts at the upper end, as though it had been used for an anvil ($\times \frac{1}{2}$).

No. 2 and 2a, a fragment of a sawn rib; the sawn surface is seen "en face" in the upper part of No. 2, in 2a almost in profile; a scratch left by an erratic movement of the saw is to be seen just below it ($\times \frac{1}{2}$).

applied to the face and when it had sunk halfway through, its thickness prevented it proceeding further; attempts were then made to saw across the edges but without success, for the rib then broke across along the original notch (Fig. 23, No. 2, 2a).

Bruised bone.—We also found fragments of bones which had been scraped by flint implements, and one of these is marked with bruises (Fig. 23, No. 1), recalling those which have been observed on "compressors" from Mousterian deposits and attributed to pressure applied in the flaking of flints.

Ivory pendant.—A singular history attaches to this object (Plate XXII, Fig. 3a). In the course of his explorations Buckland found part of a mammoth tusk "in which," he says, "has been formed an irregular cavity about two inches in diameter (similar

¹ Capitan and Peyrony, "Station préhistorique de La Ferrassie," *Rev. Anthro.*, 1912, xxii, p. 96, Fig. 34.

to those effects of ossific inflammation which are produced in recent ivory by gunshot wounds) and encircled with concentric laminæ of bony matter placed obliquely to the grain of the ivory: it is probably the effect of a blow or fracture received while this part of the tusk was yet in its pulpy state and within the socket."¹

While our digging was in progress an incursion of the sea washed out of the cave earth a curious egg-shaped body (Plate XXII, Fig. 3a), the nature of which was not obvious to inspection. Its general form and appearance suggest a natural growth but it bears evident traces of human workmanship. At one end it is produced into a little process, evidently natural, and below this two plane surfaces have been pared away, so as to reduce its thickness as a preliminary to boring a hole through it. The boring was driven from both sides, two conical cavities being produced which meet in the middle.

The substance of this pendant looks like ivory, but it does not show the ivory grain. For further information its specific gravity was determined; it weighs 114.3 grams in air and 53.5 grams in water, its specific gravity as a whole is therefore 1.88, while that of the ivory found in the cave ranges from 2.52 to 2.83, with a mean of 2.6. This discrepancy suggested the presence of some internal cavity; some minute fragments were therefore removed and their specific gravity determined by means of a diffusion column, it was found to range from 2.52 to 2.7, the greater part having a specific gravity of 2.6. This object is therefore of the same nature as the ivory of this cave, a conclusion which a chemical examination confirms. An internal cavity is present with a volume of 16 or 17 c.c., or about one quarter of the volume of the whole (60.8 c.c.).

The outer surface is smooth and polished, but rises here and there into tubercles and tear-shaped ridges or exostoses, some of which have been planed away by a stone implement. The perforated end is stained red with iron oxide.

On puzzling over this object I concluded that it must be an osseous growth produced by a wound in the pulp cavity of a mammoth's tusk, and then on referring to Buckland's work I came across his similar explanation of an abnormal growth previously quoted. When discussing this with my friend and assistant, Miss Byrne, she informed me that the specimen described by Buckland was in the Museum collection (Plate XXII, Fig. 3). We were therefore able to compare them, and found that they tallied to a nicety, the egg-shaped body obviously fitting into the cavity of the injured tusk. Thus, after the lapse of many thousands of years, we are able to bring these objects once again into their natural relations.

This curious coincidence affords additional evidence of the contemporary existence of Paviland man and the mammoth, and it shows in particular how sound Buckland was in his original judgment that the worked ivory had been obtained from the tusks of the mammoth.

As to the purpose of the pendant, which would have made an excellent plummet, we may, I think, dismiss the idea that it was used as a net sinker or for

¹ Buckland, *tom. cit.*

any mechanical purpose. The walls of the perforation are too fragile to resist any but the slightest strain. Magic powers were probably attributed to so rare and remarkable an object and it might have been suspended in the cave or slung round the neck of the hunter to bring him good luck.

COMPOSITION OF THE IVORY.

The ivory and bones of the cave earth generally retain a considerable quantity of organic matter which, on dissolving away the mineral constituents in dilute hydrochloric acid, remains behind as a transparent, fairly consistent mass.

The specific gravity of this organic residuum, as well as of the bone or ivory as a whole, can be determined on very small quantities by suspension in a diffusion column, which thus affords a simple and elegant means of discovering how far the decomposition of these substances has proceeded.

The organic matter is only slightly denser than the elastin or ossein from which it is derived; thus the fresh elastin of recent ivory has a specific gravity of 1.28, the decomposing elastin of the mammoth ivory of Paviland of 1.29.

If we attribute a specific gravity of 3 to the bone earth, which is the mineral constituent of ivory, then the composition of the ivory will be about 40 per cent. of elastin and 60 per cent. of bone earth, this ratio giving a specific gravity of 1.953 while the observed specific gravity is 1.94.

The specific gravity of Egyptian ivory from tombs of the First Dynasty, *i.e.*, 5,000 years old, is 2.4, of some of the mammoth ivory of Paviland 2.545; of *E. antiquus* ivory 2.62, and of *E. meridionalis* 2.87, and the corresponding quantities of elastin are for Egyptian ivory 20 per cent., mammoth ivory 13 per cent., *E. antiquus* ivory 10 per cent., and *E. meridionalis* 3 per cent. These results suggest the possibility of determining the age of a specimen of ivory from its specific gravity, but on repeating my observations I find variations of so large an amount that it will be necessary to make further observations.

THE SKELETON.

The famous "Red Lady" was found by Buckland on the left (west) side of the cave under 6 inches of earth, but judging from the eroded extremities of some of the bones (radius and ulna) it would seem probable that a part must have been exposed to the air and worn away by the action of water.

Nearly the whole of the left side of the skeleton was preserved, but as Buckland expressly states, the skull, vertebrae, and the extremities of the right side had disappeared. It is worth while to call attention to this statement because a belief prevails that the skull was obtained and was deposited in the University Museum but subsequently lost: so that one of the first inquiries made to a new professor of geology is "Have you found the Paviland skull?" For this legend

the diagrammatic illustration given by Buckland¹ is probably responsible, since it represents the skeleton as complete, skull and all.

The bones are said not to have been disturbed, so that this part of the cave, at least, had not been dug over before Buckland's visit; they were extended "in their natural order of contact" and included the humerus, radius, and ulna of the left arm and the bones of the left leg with the foot "entire to the extremity of the toes," as well as a part of the right foot and many ribs. These, with unimportant exceptions, are to be found in the Museum, which contains, in addition, the greater part of the right fibula, the distal extremity of the right tibia, and a fragment of the left scapula; but of ribs there are only four fragments, and some of the bones of the left foot are missing.

Buckland notes the curious fact that in the midst of the bones of the ankle there was a small quantity of a yellow wax-like substance resembling adipocere.

There is a remarkable parallelism between this interment and those of Mentone; here as there the body was laid out approximately parallel to the axis of the cave, with no attempt at orientation; red ochre was profusely scattered over and about it and this pigment still adheres to the bones; large stones were placed at the head and feet; and various funerary objects, such as ivory rods and ornaments, and little seashells (*Natica neritalis*) were buried along with it.

Miss Byrne found in the material from our excavation the distal end of a left humerus which differs greatly in character from that of the "Red Lady."

Description of the Bones.

For the measurements of the bones given in the following account, as well as for numerous descriptive notes, I am indebted to Mr. F. H. S. Knowles of Oriel College.

The *humerus* (Plate XXIII, Figs. 2, 3) is a comparatively slender bone and the muscular attachments are far from well marked; perhaps this may help to account for Buckland's belief that the skeleton was that of a woman. But, as Mr. Knowles points out, the articular head is large, the maximum diameter of the articular surface measuring 47 mm., and this points strongly to the male sex,² a suggestion which is strengthened by the magnitude of the head of the femur (49 mm.), and still more by the head of the tibia (76 mm.). There is thus the strongest presumption that the "Red Lady" was not a woman but a man.

¹ *Loc. cit.*, Pl. 21.

² G. A. Dorsey, *Boston Medical Journal*, 1897, vol. cxxxvii, p. 80. Dorsey's observations on 38 Red Indians of the north-west coast of North America showed that the diameter of the head of the humerus ranged from 39 to 43 mm. in the women and from 44 to 51 mm. in the men; of the femur from 39 to 43 mm. in the women and from 44 to 54 mm. in the men; of the tibia from 65 to 70 mm. in the women and from 72 to 86 mm. in the men. For civilized and European races the results were similar.

The dimensions of the humerus are given in the following table, which includes those of the Mentone examples for comparison:—

| Humerus. | Pav. | Cav. | Enf. | | B.G.1. | | B.G.2. | |
|---------------------------------------|------|------|------|-----|--------|-----|--------|-----|
| | L. | R. | R. | L. | R. | L. | R. | L. |
| Total length | 338 | 342 | 369 | 365 | 374 | 379 | 354 | 350 |
| Breadth of upper end | 49 | — | 54 | 53 | 61 | — | 57 | 62 |
| " " lower " | 56 | — | 66 | 66 | 70 | 68 | 64 | 65 |
| " " lower articular surface ... | 47 | — | 49 | 47 | 53 | 47 | — | — |
| " at the level of the deltoid ... | 20 | — | 27 | 23 | 33 | 26 | 20 | 29 |
| Thickness in the middle | 19.4 | — | 26 | 22 | 27 | 23 | 24 | 28 |
| Index of thickness | 5.9 | — | 7.3 | 6.3 | 8.8 | 6.9 | 5.7 | 8.3 |

NOTE.—In this and subsequent tables the following abbreviations are used:—*Pav.*, Paviland; *Cav.*, Grotte du Cavillon; *Enf.*, Grotte des Enfants; *B.G.1.*, Grotte de la Barma Grande, 1; *B.G.2.*, Barma Grande, 2.

The epiphyses are ossified to the shaft, but the line of demarcation is still evident and the age is therefore not much over twenty-five years.

The *ulna* (Plate XXIII, Fig. 1), of which only the proximal three-quarters is preserved, is comparatively slender, but with well-marked muscular impressions; the summit of the olecranon shows the commencement of a circular groove for the insertion of the triceps and there is a deep pit for the short supinator muscle (just below the little sigmoid cavity).

The *radius* (Plate XXIII, Fig. 1), of which also only the proximal three-quarters is preserved, is a rather slender bone and not much curved; the bicipital tubercle is large and well marked. The sagittal flattening of the shaft just below the attachment of the round pronator is much less than in the examples from Mentone. In both radius and ulna the epiphyses are ossified to the shaft, an indication that the age was above twenty years.

The *os innominatum* (Plate XXIII, Fig. 4) is described by Mr. Knowles as follows:—

"The general size and shape of this bone, the pronounced muscular attachments, the large obturator foramen, and the form of the great sacro-sciatic notch, which is narrow and longer along the inferior than the superior margin, show that it belonged in all probability to a male subject. The pelvic outlet and inlet, so far as can be judged from one side alone, resemble the male rather than female type."

The *femur* (Plate XXIV, Figs. 1, 4) is a strong stout bone with pronounced muscular attachments. The *linea aspera* forms a prominent ridge; below and immediately outside its upper and outer bifurcation is a large but shallow depression which corresponds with the hypotrochanteric fossa of Dr. Housé, it is about

60 mm. in length, and 11 mm. in breadth. This is a feature which is very characteristic of the Crô-Magnon race, though not confined to it. The lesser trochanter is prominent; but, again agreeing with the Crô-Magnon femur, there is no third trochanter; as Professor Verneau points out, it is not till we enter the neolithic age that a third trochanter becomes at all frequent.

The epiphyses are ossified with the shaft, but the line of demarcation is still evident, from which we may infer that the subject was not much over twenty-five years of age.

The dimensions of the femur are as follows:—

| | | |
|--|--------|---------|
| Maximum length in the oblique position | ... | 476 mm. |
| Subtrochanteric diameter, sagittal | ... | 27 " |
| " " transverse | ... | 36 " |
| " index | 70·27 | |
| Pilastric diameter, sagittal | ... | 32·5 " |
| " " transverse | ... | 27·5 " |
| " index | 118·18 | |
| Popliteal diameter, sagittal | ... | 33 " |
| " " transverse | ... | 45 " |
| " index | 73·33 | |

It will be seen from the platymeric and popliteal indexes that the shaft presents a considerable amount of transverse flattening both above (platymery) and below. Comparison with the Crô-Magnon race may be made from the following table:—

| Indices. | Pav. | Enf. | | B.G.1. | | B.G.2. | | Men.* | Mean.† |
|-----------------|-------|------|----|--------|----|--------|------|-------|--------|
| | L | R | L | R | L | R | L | | |
| Subtrochanteric | 70·27 | 77 | 76 | 69 | 75 | 54 | 67 ? | 76 | 70·6 |
| Popliteal ... | 73·33 | 73 | 79 | 81 | 83 | 71 ? | 83 ? | — | 78·3 |

According to Professor Manouvrier platymery commences at 80, is well marked between 75 and 65, and very strong below 65. Thus all the Crô-Magnon femurs are obviously platymeric and the index of the Paviland femur is almost identical with the mean obtained from the Mentone examples. The popliteal flattening is more pronounced in the Paviland than in most of the Mentone femurs, but, as Professor Verneau remarks, these do not present so great a popliteal flattening as some modern Europeans.

* Men. Femur in Museum of Mentone.

† Mean for Grimaldi femurs.

The *tibia* (Plate XXIV, Fig. 2) shows the same vigorous development of the muscular attachments as the femur. Its dimensions and index are given along with those of the other Crô-Magnon in the table below tibia:—

| | Pav. | Cav. | Enf. | | B.G.1. | | B.G.2. | | Crô-M. |
|-------------------|------|------|-------|------|--------|------|--------|------|--------|
| | L. | R. | R. | L. | R. | L. | R. | L. | |
| Length | 398 | 404 | 448 | 450 | 436 | 432 | 402 | 398 | — |
| Sagittal diameter | 40 | 43 | 42 | 43 | 48 | 47 | 52 | 47 | — |
| Transverse " | 24 | 28 | 29.5 | 29 | 28 | 28 | 32 | 29 | — |
| Index of breadth | 60 | 65.1 | 70.2 | 67.4 | 58.3 | 59.6 | 61.5 | 61.7 | 63 |
| | | | 68.84 | | 58.95 | | 61.61 | | |

The transverse flattening or platycnemia exceeds the mean (63.4) of the Mentone examples, but falls well within the series.

Professor A. Thomson calls attention to an accessory facet on the anterior side of the lower articular surface. He regards this as associated with the habit of sitting in a squatting posture; it is common among primitive races, both prehistoric and modern.

The *fibula* (Plate XXIV, Fig. 3) is 388 mm. in length. It resembles in general characters the fibula of the Crô-Magnon race, the longitudinal furrows are deep, the ridge for the insertion of the interosseous ligaments is prominent, but there is no marked torsion in the distal quarter of its length.

The *astragalus* and *calcaneum* (Plate XXIII, Figs. 5, 6) do not present any noticeable peculiarities.

THE STATURE OF PAVILAND MAN.

In determining the stature of Paviland man we have the choice of two methods, one that of a distinguished anatomist—Professor Manouvrier,¹ the other of a distinguished mathematician—Professor Karl Pearson.² The latter is becoming increasingly used in England, the former is adopted by Professor Verneau in his monograph on the Grimaldi or Mentone skeletons. We will make use of both and for the sake of comparison we will extend the application of Professor Pearson's method to Professor Verneau's material.

¹ L. Manouvrier, "La Détermination de la Taille d'après les grands os des membres," *Mémoires de la Société d'Anthropologie de Paris*, 1893, sér. 2, vol. iv, pp. 347-402.

² K. Pearson, "Mathematical Contributions to the Theory of Evolution. V. The Reconstruction of the Stature of Palæolithic Races," *Phil. Trans.*, 1899, vol. 192, pp. 169-244.

The lengths of the long bones which provide us with data are given in the following table:—

| | Pav. | Cav. | Enf. | | B.G.1. | | B.G.2. | | Crô-M. | | Ba. |
|-------------|------|------|------|-----|--------|-----|--------|-----|--------|-----|-----|
| | L. | R. | R. | L. | R. | L. | R. | L. | R. | L. | |
| Humerus ... | 338 | 342 | 369 | 365 | 374 | 379 | 354 | 350 | 322 | 320 | 363 |
| Femur ... | 476 | 470 | 523 | 522 | 532 | 526 | 491 | — | 475 | — | — |
| Tibia ... | 398 | 404 | 448 | 450 | 436 | 432 | 402 | 398 | 395 | — | — |

The statures inferred are given in the next table:—

ESTIMATED STATURE OF CRÔ-MAGNON MEN.

| | Pav. | Cav. | Enf. | | B.G.1. | | B.G.2. | | Crô-M. | | Ba. |
|-----------------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|-------|
| | L. | R. | R. | L. | R. | L. | R. | L. | R. | L. | |
| Humerus ... | 1.696 | 1.709 | 1.774 | 1.774 | 1.794 | 1.814 | 1.730 | 1.732 | 1.637 | 1.644 | 1.756 |
| Femur ... | 1.714 | 1.703 | 1.802 | 1.800 | 1.819 | 1.807 | 1.742 | — | 1.712 | — | — |
| Tibia ... | 1.732 | 1.751 | 1.851 | 1.861 | 1.823 | 1.818 | 1.742 | 1.737 | 1.725 | — | — |
| Fe. and Th. (e) | 1.732 | 1.732 | 1.842 | 1.845 | 1.839 | 1.830 | 1.752 | — | 1.725 | — | — |
| " " (f) | 1.729 | 1.728 | 1.840 | 1.843 | 1.838 | 1.830 | 1.751 | — | 1.724 | — | — |
| Means of (e) | — | — | 1.8425 | | 1.8345 | | — | | — | | — |
| Manouvrier | 1.735 | 1.74 | 1.89 | | 1.88 | | 1.77 | | 1.716 | | 1.80 |
| Verneau ... | 1.785 | 1.79 | 1.94 | | 1.93 | | 1.82 | | 1.766 | | 1.85 |

The first six lines in the table give the results obtained by Professor Pearson's formulæ; the seventh the results from M. Manouvrier's tables, as calculated by M. Verneau, except for the man of Crô-Magnon calculated by M. Rahon and of Paviland by myself; the last line gives the results obtained by adding 5 cm. to those in the seventh line, as is done by M. Verneau, who justifies this procedure by the following statement: "Je possède, à l'heure actuelle, 17 observations de sujets de grande taille dont on a pu mesurer les os longs après la mort. La taille *calculée* à l'aide de ces longueurs est *toujours inférieure* à la taille prise sur le vivant. L'écart, assez variable suivant les individus, atteint en moyenne 5 centimètres."

Without this addition, however, most of the heights obtained by M. Manouvrier's formulæ are noticeably greater than those obtained by Professor Pearson's, which we

have provisionally adopted. If it should prove that we must add the 5 cm. claimed by M. Verneau, our estimates given below will be increased by 2 inches.

It will be seen that the results calculated by Professor Pearson's formulæ from the humerus are, in all instances but one, lower than those obtained from the other bones; it is the same with those based on the femur when compared with those based on the tibia. We shall discover the explanation of this when we come to consider the proportions of the limbs; and we shall be led to conclude that the values which make the most probable approach to the truth are those obtained from the femur and tibia taken together and from Professor Pearson's formula (*e*) rather than (*f*). These give us in round numbers as the mean height of the race 5 feet 10 inches, with a maximum just over 6 feet and a minimum of 5 feet 8 inches. A tall people even on this estimate, still taller if we accept M. Verneau's results, and offering in any case a striking contrast to the Neanderthal men who, from Professor Pearson's calculations based on the Neanderthal and Spy skeletons, attained a height of only 5 feet 3·6 inches (1616 mm.). The Chancelade man, with an Eskimo skull, has the stature of an Eskimo, 1575 mm. (Pearson) or 1592 mm. (Manouvrier), and not of a Crô-Magnon man.

PROPORTIONS.

As we learn from the investigations of M. Verneau the proportions of the limbs in the Crô-Magnon race differ notably from those of modern Europeans.

In the lower limb the length of the leg as opposed to the thigh is greater than in most existing races. The relative length of the two segments as expressed by an index (length of tibia \times 100 / length of femur) is as follows:—

| Barma Grande 1. | Barma Grande 2. | Paviland. | Gr. des Enfants. | Cavillon. |
|-----------------|-----------------|-----------|------------------|-----------|
| 81·20 | 81·54 | 83·83 | 85·44 | 85·96 |

The mean of the Grimaldi examples is 83·53 or almost identical with the index for the Paviland man. In Europeans the index is 79·72 and in Negroes 81·33.

The unfortunate defect of the radius, which has lost its distal extremity, renders it impossible to compare the upper and lower limbs in their entirety; we are reduced, therefore, to a comparison of the femur with the humerus. Making use, as before, of an index (humerus \times 100 / femur) we have the following:—

| Crô-Magnon. | Gr. des Enfants. | | B.G.1. | | Pav. | B.G.2. | | Cav. |
|-------------|------------------|-------|--------|-------|------|--------|----|-------|
| | R. | L. | R. | L. | L. | R. | L. | R. |
| 67·79 | 70·56 | 69·92 | 70·3 | 72·05 | 71 | 72·1 | — | 72·77 |
| | 70·24 | | 71·17 | | | | | |

The mean of the Grimaldi examples is 70·8, again almost identical with the index for the Paviland man. In modern Europeans the index is 77; thus in the Crô-Magnon race the humerus is unusually short, and this explains the discrepancy between the stature estimated from it (1·696 Paviland), and from the femur and tibia (1·732).

We have seen that the femur is shorter than usual relatively to the tibia, and this might lead us to suspect that the humerus may be shorter than usual relatively to the radius; that this is actually the case is borne out by Professor Verneau's study of the Grimaldi skeletons.

Professor Verneau has also shown that the ratio of the arm as a whole to the leg as a whole is less in Crô-Magnon men than in modern Europeans, though it approaches that in Negroes.

On surveying our results it is clear that the Paviland man—already shown to be of the same geological age, associated with the same fauna, and to have arrived at the same stage of industrial development, as the best-known examples of the Crô-Magnon race—presents also in all the discoverable characters of his skeleton the same racial peculiarities. The "Red Lady of Paviland" is a Crô-Magnon man. He was a little over twenty-five years of age, tall of stature, probably a little taller than the man of Crô-Magnon itself, and about the same height as the man of Cavillon; but these three examples are the shortest yet discovered within the limits of the race. His lower limbs were longer than usual relatively to his arms, and his leg was disproportionately long compared with his thigh.

The man of Paviland represents the most westerly outpost of a race which is known to have extended to the east as far as Lautsch and Předměst in Moravia and from Belgium on the north through the Dordogne in France to the margin of the Mediterranean at Mentone.

THE FAUNA.

The fauna is such as our previous study might lead us to expect; it is characteristically upper palæolithic, and by the abundance of the horse points especially to the Aurignacian age.

I have to thank Miss Byrne of Somerville College for identifying the numerous bones which were received at Oxford, and for making a long journey to Swansea in order to study the interesting collection which is preserved there in the museum of the Philosophical Institute. The following list has been drawn up from her catalogue:—¹

Equus caballus, very common.

Ursus spelæus, " "

Bos primigenius, common.

¹ This list agrees on the whole with that given by Falconer (H. Falconer, *Palæontological Memoirs*, 1868, vol. ii, p. 525), who, however, mentions *Cervus elaphus*, but not *Megaceros hibernicus*, and *Bos prisius*, but not *B. primigenius*. He marks some animals as common which we find to be rare, the mammoth, for instance.

| | |
|---------------------------------|-------------|
| <i>Rhinoceros tichorhinus</i> , | common. |
| <i>Rangifer tarandus</i> , | " |
| <i>Megaceros hibernicus</i> , | not common. |
| <i>Canis lupus</i> , | " " |
| <i>Elephas primigenius</i> , | rare. |
| <i>Hyæna spelæa</i> , | " |

To these may be added recent bones of fox, badger, and sheep, together with one tooth of a pig. There are some recent bones of birds, and some which appear to be ancient. *Arvicola amphibius*, mentioned by Falconer, is also represented.

The majority of the bones of the Pleistocene mammalia occur as broken fragments, a fact explained by Buckland as due to the repeated diggings of explorers. This is plainly not the case, and there can be no doubt that the bones were broken by the inhabitants of the cave, for the most part with the object of extracting the marrow. Many are covered with scratches such as would be produced in scraping off the flesh with a racloir. There are, besides, some flakes and fragments of bone which have the appearance of having been used as implements, for after a thorough scraping to remove the periosteum they have been subjected to some treatment which has marked the surface with bruised cuts (p. 362).

As already observed by Buckland none of the bones have been gnawed by hyænas, and this fact, taken in conjunction with the presence of broken hyæna bones in the cave, would seem to indicate that the ancient hunters were reduced in times of scarcity to feeding on the flesh of this disgusting animal.

Our account of the Paviland Cave is now concluded. On reviewing our results derived from the industries, the skeleton, and the fauna, we shall not fail to be impressed with their consistency, both among themselves and with the conclusions of archæologists in other lands.

The hunters who found shelter in the cave were men of large stature, members of that tall Crô-Magnon race which occupied the greater part of habitable Europe during the Aurignacian age. They were men of capacious brains, and had made great progress in such simple mechanical arts as are essential to society in its most primitive stage, when subsistence depends wholly on the natural products of the earth, chiefly on roots and fruits which it is the allotted labour of the women to collect, and next on the flesh of animals killed in the chase and contributed by the men to enliven existence by an occasional feast.

For the fine arts the sojourners in the cave seem to have had little love, they have left no recognizable drawings on ivory or bone, and the red stripes discovered by the Abbé Breuil and myself in the neighbouring cave of Bacon Hole are the only attempts at mural decoration which the race is known to have left behind in Wales. Their personal adornments were scanty, that their garments were made of prepared furs is probable, but we know nothing of their taste in dress; they

wore necklaces made of wolves' teeth and little sea-shells, as well as bracelets of mammoth's ivory, and they possibly dressed their hair with a pomatum made of fat and red ochre, a primitive but certain protection against vermin.

They doubtless exercised some magic arts, and they respected their dead sufficiently to provide them with a ceremonial burial.

Whether the Aurignacians were preceded in their occupation of the cave by the Mousterians is at least doubtful, such Mousterian implements as have been found being also known in Aurignacian deposits, nor is it certain that they were succeeded by the Solutrians, for the weapons of that war-like race, though found in the cave, prove nothing more than the advent of Solutrian influence. Of any remains which might indicate the presence of the Magdalenians there is no sign.

Since the disappearance of the Aurignacians the tide of civilization has ebbed and flowed more than once over these islands; all that it has left stranded in the cave are three copper coins to mark the Roman occupation and, for the greater glory of our own age, many broken fragments of whiskey bottles.

But the cave is not the place where the future historian will search for relics of the British Empire, and in fairness to the vanished Aurignacian hunters we must admit that the information we obtain by rummaging their kitchen midden does not exhaust their story, the best part remains untold: could we know the whole, we might have occasion to admire their ingenuity, to applaud their courage and to sympathize with their aspirations towards the ideal.

DESCRIPTION OF PLATES.

PLATE XXI.

Fig. 1.—General view of the approach to the cave from the landward side. The cliff bounds on the right, a steep valley here entering the sea. It is descended by a slope leading to a triangular grassy patch, from which a path, now well trodden, is seen as a black band descending steeply to a rocky ledge. The ledge is well defined from the cliff by a chasm which is filled below by the sea.

Fig. 2.—Final part of the climb from the ledge at a point which may be identified in the first photograph by measuring 0·3 inch to it from the figure seen against the sea.

Fig. 3.—View of the cave from in front. The foremost figure is standing in the trench which was excavated across the cave in the middle of its length.

PLATE XXII.

Objects in bone and ivory from Paviland Cave.

All the figures in this plate are reduced about $\frac{2}{3}$.

Fig. 1.—Ivory smoother or lissoir. 1a, seen from above; 1b, seen edgewise, showing one of the lateral facets; 1c, lower surface.

Fig. 2.—Fragments of ivory rods found by Buckland, 2a and 2b are comparatively thick, 2c is the longest fragment preserved, 2d is split lengthwise, 2e shows the split face of another fragment.

- Fig. 3.—Part of a mammoth's tusk, found by Buckland in 1821, showing an irregular cavity resulting from a wound. Fig. 3a, egg-shaped growth of ivory or dentine formed in the cavity of Fig. 3, found in 1913: it has been pared down on opposite sides at one end and perforated for suspension.
- Fig. 4.—Bone spatulas or marrow scoops. Fig. 4 has lost its point and Fig. 4a its handle.
- Fig. 5.—Part of an Aurignacian point with a solid base—*non fendu*.
- Fig. 6.—Ivory awl.
- Fig. 7.—Ivory rod tapering towards both extremities, at one of them it is split lengthwise, but there is no evidence to show whether this is by accident or intent.
- Fig. 8.—Fragment of an ivory point.
- Fig. 9.—Ivory awl: when found this was complete, the elongated sharp point was broken off by accident.
- Fig. 10.—Fragment of an ivory plate, scored by a graver.
- Fig. 11.—Wolves' teeth perforated for suspension.
- Fig. 12.—Fragments of an ivory amulet placed on a circle of the same curvature: cross sections of the fragments are far from constant in form, as is shown by their outlines in the interior of the circle.

PLATE XXIII.

Bones of the "Red Lady" of Paviland.

The figures are a little less than half-size (\times about $\frac{1}{100}$).

- Fig. 1.—Proximal two-thirds of left radius and ulna.
- Fig. 2.—Left humerus, posterior aspect.
- Fig. 3.—Ditto, anterior aspect.
- Fig. 4.—Os innominatum.
- Fig. 5.—Calcaneum and metatarsals of right foot.
- Fig. 6.—Calcaneum, astragalus, naviculars and cuboid, and four metatarsals of left foot.

PLATE XXIV.

Bones of the left leg of the "Red Lady" of Paviland.

A little less than half-size (\times about $\frac{1}{100}$).

- Fig. 1.—Left femur, seen from behind.
- Fig. 2.—Left tibia, from behind.
- Fig. 3.—Left fibula.
- Fig. 4.—Left femur, seen from in front.



FIG. 3.

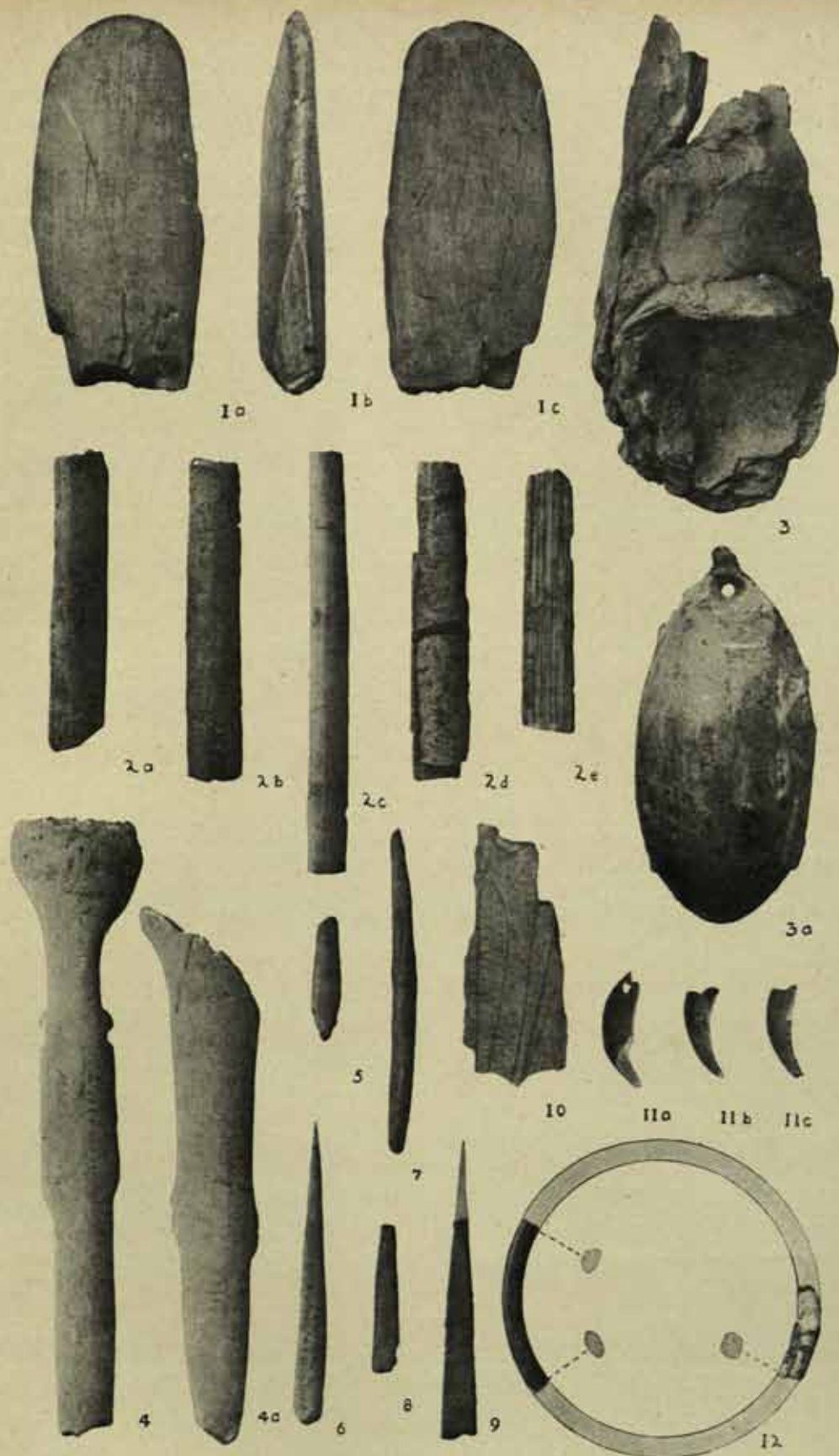
PAVILAND CAVE.



FIG. 1.



FIG. 2.



PAVILAND CAVE.



PAVILAND CAVE.



1

2

3

4

PAVILAND CAVE.

A SURVEY OF THE ETHNOGRAPHY OF AFRICA: AND THE FORMER RACIAL AND TRIBAL MIGRATIONS IN THAT CONTINENT.

BY SIR H. H. JOHNSTON, G.C.M.G., K.C.B., D.Sc.

THE paper which I am about to read contains no element of deep research and perhaps no complete solution of any ethnological puzzle. It is rather a statement of the problems and probabilities and the few known facts connected with the archaeology and history of Man in Africa. It has been compiled in the hope that by calling attention to these theories and questions, workers in the field of research may be led to fill in the outlines and to supply further and more detailed information as to the evolution of races and the gradual human conquest of this still mysterious part of the earth.

There is less written history in connection with Africa (outside Egypt) than with Asia or Europe; though of course in this respect Africa ranks before America and Australasia. In the lower valley of the Nile, history as inscribed by the brush, the reed, or the graving-tool goes back earlier than in any other part of the Old World, except Mesopotamia—Mesopotamia which may have passed on from Western Asia the Neolithic civilization that was to cross Arabia and Syria and find a wonderful sphere of development in North-east Africa. But for the deductions that follow, we depend less on written history than on the discoveries of palæontology and archaeology, on the study of philology, and the consideration of oral tradition.

Discoveries of human implements show the Nile Valley to have been inhabited by man of Palæolithic and Neolithic culture at a time considerably remote from the present day—perhaps 20,000 to 30,000 years ago; but so far there are no bones, rock pictures or sculptures to show what were the most ancient types of human being using those implements. In the prehistoric graves of Lower Egypt small figures of carved stone have been found which show some resemblance to the Bushman type in their marked steatopygy,¹ but this resemblance is not reinforced by the face, which so far is missing or too rudely limned to serve as evidence. The earliest pictures given to us by the dynastic Egyptians of the wild aborigines of the Nile Delta are engraved on slate palettes, and depict a dwarfish Negro-like race, not unlike the Congo pygmies of to-day—differing from them only in possessing rather bigger though flattish "Papuan" noses—with bushy heads of closely curled hair. The males are circumcized (after the Masai fashion); they are bearded

¹ The same may be said about the little statuettes or figurines found in South-west France.

like the modern pygmies, and in some of the other representations the women (like the Congo pygmies and Tasmanians) grow slight whiskers. I do not know if there are in Egypt or Nubia rock pictures or engravings of as remote a date as those to be seen in Tunis, Algeria, Tripoli, and above all in Southern Morocco and across the Sahara Desert. In the Sahara remarkable discoveries may yet await us, and too little publicity has been given to those already made, owing to the jealousies between ethnologists. Some of these engraved rocks, or photographs of them, can be seen in the Museum or the University of Algiers; and certain publications have been issued at Lyons dealing with the rock drawings of Northern Africa. Here we see depicted—I have had the experience myself, in South-western Algeria—an extinct type of buffalo, elephants, and (I am told) giraffes, which have long since vanished from the North African fauna. In the few examples which show man associated with these beasts, the human type is rather that of the Caucasian than the Negro.¹

Yet the skulls of greatest antiquity—judged from the depth at which they were embedded—which have so far been obtained in North Africa (and stored in the University of Algiers), indicate a Negroid type as being the most primitive Algerian people. Some French anthropologists, however, advance the idea that Neanderthaloid man reached North Africa, especially Tunisia, and that he has even left his descendants there in tribes like the Mogods of the Bizerta district. These Mogods, whom I have seen myself, have a very savage look, with their strongly developed brow-ridges and tendency to prognathism, but their divergence from the average type of Mediterranean man is merely Australoid.

The stone implements of Somaliland seem to show the existence of an ancient human population in the eastern horn of Africa. And the same may be said of Senegambia, Inner Nigeria (especially of the northernmost part of the Niger Valley), of the Gold Coast, of West Congoland, and of South Africa from the Zambezi to the Cape of Good Hope. It is, however, remarkable, that so far stone implements have not been discovered in Central Congoland, in the very heart of the Congo Forest. They have only been found along the fringe of the Congo basin; in the far north, in the open country of the Mubangi, in the region between Southern Tanganyika and Angola, and again in the Cataract region of Western Congo. This and other negative evidence points to the supposition that the most densely forested regions of Central Africa represent areas which have only been penetrated by man within a comparatively recent period. There are traditions at the present day amongst the Bantu tribes of Central Congoland that their ancestors only arrived in this region some few centuries ago; or at most 1,000 to 1,200 years back (as far as such terms of years can be calculated by the reigns of successive chiefs and dynasties); and further it is generally related, both here and in the forested parts of West Africa, that when these metal-using, big-bodied peoples arrived, the forest

¹ See *Bulletin Trimestriel de la Société de Géographie et d'Archéologie d'Oran*, December, 1908. Also the writings of L. Pomel, J. B. Flamand, and E. F. Gautier—easily found in British Museum Library.

country was only occupied by a dwarfish race, sometimes referred to as "red men," in fact, similar to the Congo pygmies of to-day. These traditions of a pre-existing dwarfish (occasionally red-skinned), negroid race are existent in parts of Inner Nigeria and in the southern oases of the Sahara.

It is in South Africa that the most interesting and the most puzzling of discoveries have recently been made regarding the antiquity of prehistoric Man. When the Hottentots of South Africa were questioned by scientific men a hundred years ago and more regarding their traditions, they were wont to refer to their predecessors on the coast of South Africa as a savage race living on the seashore and subsisting on shellfish and the bodies of stranded whales. From their habits these were styled in Dutch the Strandloopers or "Shore-runners." About twenty years ago discoveries began to be made of skulls and bones of the Strandloopers in caves on or near the sea-coast, and the first of these that were brought to light, and described by Dr. F. C. Shrubbsall and others, exhibited (I am told) some degree of affinity with the Bushman, but appeared to be more primitive and perhaps more typically Negro in the prognathism they exhibited and the proportionate length of the skull. There would seem to be survivors of this prognathous Strandlooper type amongst the Bushmen and Hottentot peoples of South-west Africa at the present day, for I throw on the screen slide-photographs of a Bushman and of a so-called Hottentot woman (actually, we know, of Bushman race) which exhibit a degree of prognathism exceeding that of any other race known in Africa or elsewhere. They thus differ sharply from the conventional Bushman head, which is round and with a comparatively high facial angle, and little or no protrusion of the jaws. [These photographs are not isolated examples, but only selected instances. See Note at end of paper.]

But other specimens of Strandlooper skulls, such as those described recently by Dr. Péringuey, were neither Bushman nor particularly Negro in their affinities. They exhibit considerable brain capacity, and recall much more in general outline the skull form of generalized Negroid-Caucasian types, say, for example, the Hamitic peoples of North-east Africa; and they have even been compared to the Galley Hill skull of East Kent—a primitive Caucasian type that existed in England some hundred thousand years ago. With this large-brained skull may be apparently associated in South Africa those stone implements which are pre-Bushman, in some respects superior to Bushman arts and inventions.¹

¹ Our chief source of information on the subject of the Strandloopers is vol. viii of *The Annals of the South African Museum*, written in the main by the Director of that Museum, Dr. L. Péringuey. In Chapter 22 of that work, Dr. Péringuey discusses the evidence of the Strandlooper skulls as analysed up to about 1911 by Dr. F. C. Shrubbsall (F.R.A.I., of London). Dr. Shrubbsall has studied the Strandlooper question for something like fifteen years, and has written on it in various works, including the present writer's "Uganda Protectorate." It is understood he has much unpublished material on this important question to give to the world, so that when his final verdict is pronounced our conclusions may be strengthened or changed. But as they stand at present the results of his investigations would seem to show—

That the Strandlooper of the Cape Colony caves (as distinct, perhaps, from the miserable race of shore dwellers exhibiting the prognathism above referred to) preceded the Bushman in

The next oldest type in South Africa was probably the Bushman, and the Bushman certainly seems to have reached Southern Africa from the north-east. We can trace his physical peculiarities up through Eastern Africa into Galaland, and some say even into Egypt.

It may be as well at this juncture to consider what are the leading Bush physical peculiarities, apart from skull formation. They consist of the steatopygia already alluded to, and small, folded-over ears, of the hypertrophy of the *labia vulvæ minora* in the woman, and, in the men, of the peculiar angle at which the penis is set in relation to the pubic region. The "pepper-corn" aspect of the tightly curled head-hair—which seems only to be planted in distinct patches—together with the light-yellow, wrinkled skin and the small hands and feet, are features shared by other African or even Oceanic groups of Negroes. This pepper-corn arrangement of the head-hair tends to disappear in the north Kalahari Bushmen, in whom also the skin colour is darker and the wrinkles are usually absent.

These North Kalahari or Ovampoland Bushmen usually exhibit some degree of brow-ridge development in the male, their cheek-bones are very prominent, the base of the nose is much sunk and the eyes are very deep set.

South Africa; that the Strandloopers were a race of short but not dwarfish men (the earlier examples were taller than the later) with a much higher skull capacity than that of the average Bush race—1,500 cubic centimetres as against 1,300 for Bush men and 1,350 as against 1,200 for Bush females. The extreme of cranial capacity in the Strandloopers was a maximum of over 1,600 cubic centimetres, while the extreme minimum among the Bush people descends as low as 955 cubic centimetres! The frontal region of the skull is much better developed than in the Bush race, and in that respect is more like the Negro. There is little or no brow prominence, and one at least of the skulls is as orthognathous in facial angle as that of a European; others of the skulls are slightly more prognathous, but the Strandlooper type was as orthognathous as the average European. The teeth are well developed and liberally spaced, but are not proportionately as large as those of the true Negro. Dr. Péringuey denies there being any definite resemblance between the Strandlooper cave-dweller and the "Grimaldi" skulls of Monaco. He considers that these South African cave-dwellers were the most primitive known race of South Africa, the oldest examples being the least negroid in features. Yet the affinities between them and the Bushmen were more evident than between Cave Strandlooper and Negro.

Professor Henry Balfour (who will shortly publish an essay on the subject in the *Journal of the African Society*) seems to be of opinion that prior to the occupation of South Africa by Bush, Hottentot, and Bantu, there was a race of superior Paleolithic, almost Neolithic culture, judging from the oldest stone implements and other relics discovered south of the Zambezi. This same race apparently colonized even more markedly the Central Zambesian regions, and to it may be perhaps accredited the ancient pottery discovered at considerable depths below the surface of Nyasaland. Dr. Péringuey, on p. 215 of the work quoted above, sums up his conclusions regarding the Cave Man of Cape Colony:—He was less dolichocephalic than the Bushmen and Hottentots, under 80 in cephalic index. "He was artistically gifted, like the race which occupied and decorated the Altamira . . . and other caves of Spain and France. He painted; he possibly carved on rocks; he used bone tools; he made pottery; he perforated stones for either heading clubs or to be used as make-weights for digging tools (I have obtained these perforated stones from South Tanganyika and Nyasaland—H. H. J.); his ornaments consisted of sea-shells; and the ostrich egg-shell discs, which he made, may be said to be a typical product of his industry. And this culture is retained in South Africa by a kindred race, but more dolichocephalic—the Bushmen-Hottentots. . . . Analogous are most of his tools and his expression of culture to those of Aurignacian man."

In the ordinarily small stubby feet of the Bushmen the great toe is usually straight, or curves, if at all, inward and away from contact with the other toes, a condition which is seen in an exaggerated form in the Oceanic Negroes and the New Guinea Negritos. This "open-toed" aspect of the short foot is one of the few traits which the Bushman shares with the Congo pygmy, though the work of Dr. F. Fülleborn on the natives of East Africa shows that the Bushman type of foot—oblong, with inverted big toe—is sporadic in Nyasaland and Moçambique.

As to steatopygia, it occurs in a slight degree among the Congo pygmies, but is usually absent from West African Negroes.¹ It is nevertheless observable sometimes among the American Negroes (mostly recruited from West Africa), as may be noted in one amongst a number of photographs taken for me at the Tuskegee Institute to illustrate points in negro physiology. In Nileland as on the Kru Coast there is sometimes much steatopygy among the women, but it is less a great backward projection of the nates than a lateral accumulation of fat along the hinder aspect of the thighs. But the Bushman type of steatopygy reappears sporadically among the Somali and Gala women (negroid Caucasians), among Egyptian women of to-day, and even in Syria, Southern Europe, and—it is said—as far north as Poland, carried thither by the Jews. In France fashion has in the latter part of the 19th century deliberately cultivated the steatopygous outline in woman, and this predilection was based—as Dr. Péringuey suggests—on a racial admiration for "Venus callipyge," due, possibly, to the deep-down stratum of protonegro race which permeates the Mediterranean peoples. Steatopygia recurs in Arabia and among the Negroid people of South-west Persia (the old Elamites), and according to several German writers is occasionally observable among Oceanic Negroes.

As regards the exaggerated growth of the *labia minora*, the "longinymph" condition which produces what was called a hundred years ago the "Hottentot apron" (illustrated by photographs in Dr. Péringuey's work), this likewise is not a feature exclusively confined to the Bush-Hottentot race, but, as Dr. Karl Weule points out (*Native Life in East Africa*: Sir Isaac Pitman and Sons, 1909), is of constant occurrence among the Negro women of East Africa, while others have earlier stated that it is a character met with among Egyptian, Abyssinian, Gala, and Somali women. Lastly, the peculiar set of the penis in Bushmen² occurred obviously among the Mukenian and Ionian people of the Eastern Mediterranean, as may be noted in the early Greek designs on painted pottery. Like the steatopygy, the crumpled ear, and the longinymph development, this peculiarity of the Bushman male organ can be matched here and there among the nomad heterogeneous, broken,

¹ In all Negro and Bushman children and in the men and women of many Central and East African tribes the development of the nates is actually *less* than in Europeans.

² "The penis is normally carried horizontally and in some young subjects in a semi-vertical or even vertical position. In paintings it is the same; man's genitalia are never hanging when Bush people are delineated."—Péringuey. The practice of pushing up the testicles when the child was young, so that the growth of a pendant scrotum might be avoided as much as possible, lest it impeded flight, was not peculiar to the Bushmen and Hottentots, but was recorded by Greek geographers as among the practices of the Hamitic tribes of the Red Sea littoral.

hunting tribes of Equatorial East Africa, who evidently contain elements of a now absorbed Bushman race.

As regards linguistic evidence of Bushman distribution and migrations, I might point out that Ludovico di Varthema, an Italian adventurer who visited Moçambique about 1505, relates how in a mountain of caves on the mainland of Moçambique, was a people of dwarfish stature and yellow skin, whose speech was full of clicks. He compares these clicks to the noises made by Sicilian mule-drivers in urging on their beasts. I have collected traditions amongst the Bantu peoples of Nyasaland as to the existence down to quite recent times of a dwarfish, yellow-skinned, click-using, stone-throwing people on the tops of certain high mountains. At the present day there is a click-using language of undecided affinities—the Sandawi, spoken by a cattle-keeping, semi-nomad tribe to the south of the Victoria Nyanza in German East Africa. The existence of clicks in this language is undoubted, but I have not been able to trace much affinity in word roots between this language and either Bushman or Hottentot, though it is noteworthy that the word for four, *haxa*, is almost identical with the word for four in all the Hottentot dialects, while the phonology of the language is reminiscent of Bushman in its nasals and gutturals.¹ Various travellers have thought that they saw a physical resemblance to the Bushman in some of the Andorobo hunting people of Eastern Equatorial Africa. The Andorobo are mixed in their racial elements like the Sandawi. Some examples are almost Hamitic in face, others are dwarfish and offer a slight resemblance to the Bushman type, while others again are very prognathous and present a facial resemblance to certain Melanesian types of Oceania.² The language spoken by the Andorobo—no doubt imposed on them by conquerors—is an outlying member of the Nandi-Nilotic group.

Where did the true Negro type, with more or less black skin, tall or normal stature, large feet, big teeth, thickly-growing woolly hair, originate? This is a problem that perhaps lies outside Africa and the scope of my paper, and it is one as to which we can only hazard vague guesses. We find a markedly Negro type in Papuasia, more especially in the islands of the Bismarck Archipelago to the east of New Guinea. The distribution of the Negro throughout Southern Asia occurs sporadically, but scarcely anywhere in a pure form. The type of Asiatic Negro existing at the present day which most nearly resembles the Negro races of Africa, is that which is to be found in the northern Solomon Islands and the Bismarck Archipelago. The Grimaldi skulls of Monaco were Negroid in some features, but they show a brain capacity much exceeding that of African or Asiatic

¹ In the Pygmies of the north-eastern corner of the Congo basin and amongst the Bantu tribes of the Equatorial East African coast there is a tendency to faecal gasps or explosive consonants which suggests the vanishing influence of clicks.

² The Nandi people on the western and the Kikuyu on the eastern side of the Rift Valley in Equatorial East Africa offer similar divergent types of prognathous, small-featured, low-statured Negroids and comely, big-nosed, orthognathous Caucasoids.

Negroes. Their age has been guessed at some 30,000 years ago, but this may be an under estimate.¹ It is conceivable that the Negroid sub-species originated in Western Europe and thence spread southwards into Africa and across Western and Southern Asia into Australasia, reaching in its most generalized and primitive type the far distant Island of Tasmania. There is some evidence to show that Algeria (and North Africa generally) was inhabited by a Negro race before these regions were invaded by the Caucasian.

The Congo Pygmy seems to be little else than a primitive and dwarfed form of the Forest Negro, perhaps representing one of the earliest types of Negro that invaded Africa. The Negro specialized in the swamps of Nileland into what we know as the Nilotic Negro: tall, even to gigantic, long-legged, but as a rule with comelier features and a better development of brain than in the Forest Negro. There is perhaps a third variety to be distinguished: the Sudan Negro: the type so often met with in Bornu, in the Bahr-al-Ghazal, Kordofan and the western flanks of Abyssinia; also in French Nigeria. This Sudanese Negro shares the tall stature and thin shanks of the Nilotic, but sometimes exhibits a good deal of prognathism and has the triangular face and the aggressively projecting cheek-bones of the Bushman-Hottentot and the exaggerated eversion of the lips, which is also a feature in the West African Forest Negro. The fusion of these three varieties, dashed here and there with Pygmy and with Bushman blood, gives us the "Bantu" Negro, a linguistic term which merely connotes a vast congeries of Negro tribes united by the common bond of language. Except as indicating an average Negro, and a fusion of Negro types, the term Bantu has no value in physical classification.

Looking back into the past by the very dim light furnished by the discovery of crania and bones, a few objects of human art, and the indications of language affinity, we seem to see an Africa 15,000 years ago which was mainly Negro or Negroid in population. But already at this period the Mediterranean man—a Caucasoid—had entered Egypt and occupied the Nile Delta, driving away or absorbing its dwarfish Negro population. He might even have penetrated up the Nile into the highlands of Abyssinia. He had certainly much earlier begun to colonize Tunisia, Algeria, and Morocco, and was pursuing and destroying the remarkable mammalian fauna of North Africa, which even at as recent a date as about 15,000 years ago had a decidedly African *facies*, as already indicated in my opening remarks.

What was the type of language spoken by the earliest white colonists of North Africa? Some French ethnologists have suggested that it may have been the ancestor of the Fula, Wolof, Temne, Bantu, and Kordofan groups, a type of language offering faint resemblances in structure with the Lesghian speech of the Caucasus and the Dravidian tongues of Baluchistan and India; a speech in which

¹ See the monograph of Dr. Verneau on the *Grottes de Grimaldi*. Dr. Verneau has also made an exceedingly interesting anthropological survey of Abyssinia, published (1911) by the French Government, which bears on some of the theories advanced in this paper.

nouns were divided into more or less numerous classes with distinctions not based on sexual gender, and in which as a rule the root was unchanging, while much use was made of detachable prefixes or suffixes, linked up throughout the speech by concordant adjectival and pronominal particles. According to such a theory, therefore, the first Caucasoid invaders of North Africa would have used tongues akin to that of the Fula, and when they were forced by the impact of other immigrants from the north or east to wander into Negro Africa they became the ancestors of the Fula and carried their language family with them far into the Sudan and West Africa; perhaps in the direction of Kordofan or the Equatorial Nile developing the Bantu family. In the far west of Africa, by intermixture with the Negroes, they possibly originated the Wolof, the Temne, Mosi, and other groups, and even influenced the tongues of the Niger Delta.

The same theorists would contend that the Fula type of "white man" and of Caucasian (*i.e.*, Lesghian, Georgian) language was displaced in North Africa by the invasion of the Hamites and the Libyans or Berbers. The Hamites were no doubt of common origin, linguistically and racially, with the Semites, and perhaps originated in that great breeding-ground of conquering peoples, South-west Asia. They preceded the Semites, and (we may suppose) after a long stay and concentration in Mesopotamia invaded and colonized Arabia, Southern Palestine, Egypt, Abyssinia, Somaliland, and North Africa to its Atlantic shores. The Dynastic Egyptians were also Hamites in a sense, both linguistically and physically; but they seem to have attained to a high civilization in Western Arabia, to have crossed the Red Sea in vessels, and to have made their first base on the Egyptian coast near Berenice in the natural harbour formed by Ras Benas. From here a long, broad wadi or valley—then no doubt fertile—led them to the Nile in the Thebaid, the first seat of their kingly power. The ancestors of the Dynastic Egyptians may have originated the great dams and irrigation works in Western Arabia; and such long struggles with increasing drought may have first broken them in to the arts of quarrying stone blocks and building with stone. Over population and increasing drought may have caused them to migrate across the Red Sea in search of another home; or their migration may have been partly impelled by the Semitic hordes from the north, whom we can imagine at this period—some 9,000 to 10,000 years ago—pressing southwards into Arabia and conquering or fusing with the preceding Hamites; just as these latter, no doubt, at an earlier day, had wrested Arabia from the domain of the Negroid and Dravidian.

The Dynastic Egyptians were not far distant in physical type from the Gala of to-day, but they had perhaps some element of the proto-Semite; and their language, which is still rather a puzzle to classifiers, though mainly Kushite in its features, exhibited early in its history the influence of Semitic speech, and no doubt absorbed into itself elements of its Libyan sister, which it perhaps found already extending to the valley of the Nile. The Dynastic Egyptians evidently concentrated themselves in the narrow strip of fertility along the banks of the Nile, not colonizing very markedly the Red Sea coast-lands. By about 8,000 years ago they

had become the conquerors and rulers of Lower and Upper Egypt. The inhabitants of Egypt were thenceforth a people in which Hamitic (Libyan-Kushite), Semitic, Nilotic and even Sudanese-Negro elements were fused; but the Caucasian type predominated. In the early days of their colonization, the Dynastic Egyptians domesticated only the indigenous African wild ass, the Nubian ibex, the audax or African wild sheep, the *Leucoryx* and *Addax* antelopes, and the striped hyena.¹ They probably brought with them from Arabia various types of domesticated dog. As they increased their trade relations with Syria and Mesopotamia they received from the north-east first the long-horned "Gala" ox (which originated seemingly in Western Asia), next the hairy, long-tailed, long-legged, maned, domesticated mouflon of Europe and Western Asia, a little later the fat-tailed, dewlapped variety of this sheep, and, in succession, the "Wallachian" type of domesticated sheep (in which the spiral horns grew out at right angles to the line of the head), and the humped cattle which we know as the Indian breed, but which were near akin in origin to the early long-horned, straight-backed Egyptian ox. The first true goat which they received from Syria in a domestic form, and which rapidly displaced the ibex in their estimation, was a dwarf, plump, compact breed, with short hair and rather reduced horns—the Guinea goat of to-day.² This was succeeded at a later date by the Roman-nosed Syrian goat with long hair, pendent ears, and a tendency to become hornless (a breed which has never reached real Negroland beyond northern Nigeria). It was not until about 500 B.C. that the Egyptians received the domestic fowl from Syria and Persia. The horse was brought by the Hyksos from Syria about 2000 B.C., but was not fully established in Egypt till about 1500 B.C., though it may have been separately imported into North Africa³ at an earlier date.

As early, perhaps, as the fifth millennium before Christ, the Pharaohs of Egypt turned their attention to the Sudan, the land of black men, which began in those days somewhere about the Second Cataract. Between the First and Second Cataract of the Nile the population was of a mixed type, Negro mingled with Kushite in various forms and degrees; but south of the Second Cataract it was almost purely Nubian, that is to say, Nuba or Sudanese Negro. Higher up still, beyond the junction of the Blue and White Niles, the population was Nilotic

¹ See Claude Gaillard's "*Les Tatonnements des Egyptiens de l'Ancien Empire à la recherche des animaux à domestiquer*" (*Revue d'Ethnographie*, etc., Paris, December, 1912).

² This obviously ancient breed—the only one known to true Negro Africa—penetrated through India to Malaysia and Borneo, where it still exists, displaying much likeness to the domestic goat of West and Central Africa.

³ It is very doubtful whether North Africa any more than Egypt or Arabia possessed a wild horse of the *Caballus* sub-genus. The bones of extinct equines indigenous to Algeria rather suggest a type of zebra than a horse. (See the writings of L. Pomel.) But the ancestors of the Barb or Numidian horse may have been brought by the Berbers from Spain at a comparatively early date. After 1000 B.C., the Phoenicians no doubt imported the Arab type of horse into Mauretania and crossed it with the Spanish horse. So far, we have discovered no traces of any true indigenous wild horse in Syria or Arabia, only asses. It is probable that the true horse was confined in its area of evolution to Europe, Central Asia and North India.

Negro, though at a later date this region was colonized by Kushites of the Beja, Hadendawa, and Gala types. A brisk commerce in slaves, ivory, gold, leopard-skins, gums, and strange beasts and birds began between Egypt and the Nilotic Sudan, and the coming and going of caravans, probably composed of Nuba Negroes, with here and there an adventurous Egyptian, must have opened up communications between Kordofan, Darfur, and the regions round Lake Chad, as well as the purely Negro countries of the Bahr-al-Ghazal and the Mountain Nile. Thus as early as 4,000 years before the time of Christ, goats of the plump Guinea breed, hairy sheep of the long-legged or the fat-tailed varieties, and straight-backed, high-shouldered cattle of the long-horned Egyptian variety, had begun to penetrate Negro Africa across Kordofan to the regions of Lake Chad, the basins of the Niger and the Benue and the Northern Kamerun, and all parts of West Africa. Together with these domesticated animals there came all musical instruments superior to the musical bow and the drum, several types of games played with hollowed or divided boards and counters, and a good many Egyptian notions about religion. Moreover, these emissaries of trade and culture may have brought with them to the Neolithic and Palæolithic Negroes and Negroids the earliest idea of using metals, copper in the first place, though perhaps not iron.¹

Athwart this fan-shaped spread of Egyptian influence over Negro Africa—the apex of the fan being at the Second Cataract of the Nile and the two outermost spokes of its partially-opened spread lying (one) on the east, up the Nile Valley to the Great Lakes, (two) on the west through Kordofan, Darfur, and Lake Chad to the Niger Valley—we can trace strands of other Caucasian migrations and influences coming due south from North Africa: possibly "Pelagian" or "Mukenaian." But though here and there they leave traces of Pelagian or Minoan civilization in the Western Sudan and West Africa, it is clear that Negroland, anterior to the Christian era, owed less of its awakening to conditions of civilized human existence to the white men of North Africa proper (Mauretania and the Tripolitaine) than to those of Egypt. For example, all the domestic animals of Negroland (except such as have been quite recently derived from America or Europe) are of Egyptian origin or type and not North African. The early peoples of North Africa had a well-marked form of domestic dog, which exists down to this day amongst the Berber nomad tribes. This was of the long-haired, prick-eared, broad-headed Chow type, with a plumed tail tending to curl over the back—a type of dog common in Southern Europe from the Bronze period onwards and far spread in its range over all Northern and Eastern Asia and Northernmost America. This Chow-like dog, though apparently it reached the Canary Islands, never penetrated (till modern times) across the Sahara Desert to Negro Africa, neither did the taurine (as contrasted with the zebu) type of ox, the woolly sheep, the long-horned European goat, or any other domestic animal or cultivated plant of European origin. It was Egypt that furnished Negroland not only with all its earliest domestic animals, but

¹ See postscript at the end of this essay.

with all its cultivated plants, and Egypt derived these for the most part from Syria and Arabia.

The Dynastic Egyptians of later times having recreated their kingdom on the Lower Nile, after the invasion of the Hyksos, seemed to have lost interest in Negro Africa and thought mainly of extending their conquests across Syria to Asia Minor; but they retained dim traditions of the land of their origin, South-west Arabia. Moreover, a considerable boat trade had sprung up on the Red Sea, and civilized South-west Arabia was beginning to colonize with its present Semitic population the highlands of Abyssinia,¹ and possibly a good deal of Somaliland. Thus the Arabs had become acquainted (in Somaliland) with trees yielding aromatic gums, present, no doubt, also in Arabia, but not in such considerable quantities. It is possible, therefore, that Arabia first drew the attention of Egypt to the western land of Punt—the eastern horn of Africa—whither the Egyptians themselves sent ships about 1500 B.C. to open up a trade in incense and other products.

Did the Dynastic Egyptians colonize Negro Africa as well as influence it?

Perhaps relatively little, at any rate until during the thousand years which preceded the Christian era. We then seem to see traces of enforced migrations of rebels or malcontents, probably not of very pure Egyptian stock. Bands of such a kind seem to have entered the northern part of Hausaland and to have assisted in moulding the Hausa language as a medium of trade intercourse. This speech, Sudanese Negro in phonology and perhaps in most of its word roots, is emphatically Hamitic in its grammatical features and pronouns. But the Hamitic element is thought by experts to be as much Kushite, or even Koptic, as Libyan. On the whole, it seems probable that the Hausa speech was shaped by a double influence: from Egypt, and Hamiticized Nubia, as well as by Libyan immigrants from across the Sahara.²

Egyptian adventurers no doubt from time to time found their way up the Nile through the countries of the Nilotic Negroes, and there became chiefs and almost demigods, so great being the impression made by their lighter skins, their beautiful features, and possibly their domestic animals or simple arts. Sometimes one is disposed to think that those remarkable cattle-keeping aristocracies of the heart of Central Africa—the Bahima, the Batusi, the Makarka,³ and Mangbettu—are descended from Egyptian colonists of 2,000 and 3,000 years ago. I have certainly seen individuals in Western Uganda and Unyoro who were so remarkably Egyptian (rather than Gala) in features that I took them actually for Egyptians left behind

¹ The Himyaritic Arabs who Semiticized the Abyssinian highlands and incidentally Northern Somaliland, probably found Abyssinia populated by three principal racial elements: the Negro, the dark-skinned Kushite-Hamitic, and the white-skinned—sometimes blue or grey-eyed and brown-haired—Libyan. This, at least, is Dr. Verneau's assumption.

² See the article in the *Mitteilungen des Seminars für Orientalische Sprache*, Berlin, 1906, by Julius Lippert ("Über die Stellung der Hausasprache," etc.).

³ A common name for the Makarka, Azandé, and allied tribes ranging over the northern Bahr-al-Ghazal and the Northern Mubangi basin is "Nyam-Nyam"—a cant term meaning "Meat! meat!" or "cannibals." Some of the Nyam-Nyam are broad-headed and brachycephalous.

by Emin Pasha's expeditions. But they turned out to be local aristocrats who knew absolutely nothing of Egypt and could enumerate their ancestors for centuries as residents in Equatorial Africa. Others again of this type were so strikingly like Galas and Somali that the Somalis of my party declared them to be of their own race. The pure-bred Gala resembles physically the Dynastic Egyptian. It is possible these aristocracies of East-central Africa and of the Central Sudan do not owe their origin to Egypt, but to former attempts of the Galas and Abyssinians to penetrate Negro Africa. Personally I am inclined to invoke both influences.

It has indeed been suggested by Father Torrend in his Grammar of the South African languages, that the Zimbabwe civilization (which I would assert with emphasis is not Negro) is due to some unrecorded Abyssinian penetration of South-east Africa along the East African coastline. This theory is not quite so wild as it might appear, seeing that more or less degenerate Hamitic (Kushite) nomad tribes have penetrated, as it is, a considerable distance into German East Africa, as far south as the 4th or 5th parallel of S. latitude.

Considered linguistically the Hamites of Africa became at an early date divided into two main sections (to which later was added a third, the Dynastic Egyptian). These two categories might be distinguished as *Libyan* and *Kushite*. The Kushite group passed down to the south along the west coast of Arabia and left a considerable element behind in South-west Arabia and in Sokotra, which afterwards became Semiticized. Then (we may suppose) they crossed the Red Sea 12,000 years ago or more, colonized North-east Africa and Somaliland, became the ancestors of the Bishari and Hadendawa, the Saho, Agau, Bogos, Kaffa, Afar, Gala, and Somali groups.¹ Entering also the valley of the Nile in the tropical and equatorial regions, they mingled with the Nilotic Negroes and formed subsidiary groups of peoples, whose languages to this day, though they are truly Nilotic and Negro, yet bear evidence of Hamitic influence. Of such, for example, are the Masai and Lotuka. Meantime the Libyan section of the Hamitic peoples, reinforced by the Berbers (Iberians) from Spain, much whiter in skin-colour, colonized all North Africa to the limits of the Sahara and the Libyan Deserts. They in their turn mingled with the pre-existing Fula type and the Negroids, and from some such mixtures, as well as the far earlier intercourse between the Fula and the Negro, were formed the Songhai, or "Habe" (*Habe*, plural of *Kado*, is only "slaves" or serfs in the Fula tongue), the Tibus or Teda, the Kanem and Kanuri peoples; who, as lithe, handsome, and intelligent Negroids, ranged across the Sahara from Fezzan to Agades and Bornu and the oases of the Libyan Desert. These hybrids assisted to introduce into Negro Africa the white man's weapons and early domestic animals.

¹ It is remarkable that the Bishari (Bäja) and Hadendawa peoples (which formerly extended their range across Senaar to the Nile and Dongola; Dongola = Danagla, Danakil) should have preceded and outlived the Dynastic Egyptians; and equally remarkable that the British should have occupied Egypt and the Eastern Sudan since 1882 and have made no efforts to study and illustrate their interesting speech.

But if French and German theorists are right, Northern Africa, after being Hamiticized from the direction of Egypt in pre-Pharaonic times—Hamiticized on top of the previous Fula, Negro, Negroid, and Australoid inhabitants—received a colonization from Spain almost coevally with the invasion of Egypt by the Dynastic Egyptians. These Iberian invaders (who, one may permissibly suppose, were akin to the Neolithic Iberians of Western Europe) fused with the Gala-like Hamites already in possession of Mauretania, adopted their language in the main, and swept eastwards in a tide of conquest which brought them not only to the delta and valley of the Lower Nile, but even to the highlands of Abyssinia, where there is, according to Dr. Verneaux, a distinct Libyan, fair-complexioned element. Henceforth the great far-spread Hamitic group of languages became divided into two main sections: the Libyan or Berber and the Kushite. The Libyan speech reached to the very confines of Dynastic Egypt, and exists at the present day as far east as the oasis of Siwah. It is even stated by some authority—Maspero, I believe—that the Amorites of Palestine history were a Libyan tribe.

This allegation has served to support a counter theory as to the Libyan colonization of North Africa. It has been supposed that the Libyans were the north-west branch of the Hamites, and that after colonizing Egypt before the Dynastic Egyptians (as well as after them) they swept westward and occupied all Mauretania north of the Sahara Desert. On the whole I think the probabilities are that the theory of the Spanish origin of the Berbers is a sound one, and that their eastward march from Morocco is the right line of investigation. Those who are interested in the question will find it set forth in a paper by A. Lissauer, of Berlin, republished in the 1912 issue of the Smithsonian Institution, Washington.

Some impulse of Egyptian and Hamitic influence immediately prior to the Christian era (such as perhaps assisted to bring about the creation of the Hausa language) carried a wave of late Egyptian culture across the Sudan along the southern fringe of the Sahara Desert to the Upper Niger. It is thought that in connection with this movement came the east-to-west migration of the civilized Negro Mandingo peoples, who finally subdued and colonized much of Western Nigeria and founded powerful kingdoms, extending their influence over the Fulas and far into the Sahara Desert. Another focus of late Egyptian civilization seems to have been Agades, an oasis in the Southern Sahara. Here arose the remarkable Songhai or "Habe" people, whose somewhat monosyllabic language is a mystery, as it has no evident affinities with any other group of African tongues. The Songhai adopted, accidentally or by influence, an imitation of ancient Egyptian architecture in clay and wood instead of stone. They in their turn subdued the Mandingos and replaced the Mandingo empire of Melle (which had succeeded the older Negroid empire of Ghanata) by that wonderful Songhai dominion which for a time had its headquarters in the city of Jenne, at the confluence of the Niger and the Bani. From Jenne was radiated over all the Western Sudan an apparent Egyptian influence in architectural forms, in boat-building, and other arts.

West Africa proper, bounded on the north and east by the Senegal and the

Niger, is a region that hitherto has been less studied by expert ethnologists than any other portion of Africa. This is partly due to the fact that the basin of the Niger was only really conquered and occupied by European Powers from about 1890 onwards, while the coast-belt from the Gambia to Dahomé was so densely forested that, apart from the hostility of its natives and the unhealthiness of its climate, its examination was a matter of the greatest difficulty. Moreover, this quarter of Africa almost exceeds the rest in racial and linguistic complexity.

The Wolofs of Senegal are a race of handsome Negroids, showing some physical affinities with the Fula, and speaking a concord language which offers some resemblance in syntax to Fula and Bantu, but is absolutely dissimilar to both in phonology. Some of the word roots, however, suggest affinities with Fula and with other West African stocks. Between the Gambia River and the western frontiers of Sierra Leone there is a remarkable welter of indigenous tribes, mostly of exaggerated Forest Negro physical type, speaking a scarcely listed variety of dissimilar and unrelated tongues. Evidently in westernmost Africa we have a region which has received many broken peoples forced into it by the pressure of conquering tribes from the north and west. In Senegambia there are traces of ancient stone worship suggestive of "Neolithic" influence from the north. In eastern Sierra Leone, on the uppermost Niger and Bani, and in Liberia there are other isolated remnants of tribes or even considerable peoples speaking unrelated languages of unknown affinities, such as the Kisi of Sierra Leone and the Niger sources, the Gora of Liberia, the Senufo of the Bani and Baulé affluents of the upper Niger. In Liberia and part of the Ivory Coast we have the Kru peoples—typical Negroes—with a well-marked, excessively nasal type of language (all the West African peoples, by the bye, excepting the Wolof and Fula, are very nasal in utterance, and display a predilection in their phonology for the conjunction of labial and guttural consonants—kp and gb—a trait which may be traced eastwards right across Tropical Africa from Senegambia to the Mountain Nile, and southwards to the Upper Congo and the Cameroons).

Athwart all these Forest Negro tribes of unclassified languages¹ there have been certain comparatively recent invasions from the east which have entered into the recorded and unrecorded history of West Africa. There have been tribes like the Limba and Temne of Sierra Leone—paler complexioned, handsomer Negroes, cattle keepers (like most of these eastern invaders), and speaking a remarkable type of language, prefix-governed and concord-using, which, though strikingly like the Bantu in syntax, has absolutely no resemblance to that family in word-roots. The Mandingo invasion of West Africa (much associated with the introduction and use of the horse) has been already referred to: it affected West Africa within the past two thousand years (at a guess), between the vicinity of the Senegambian coast and

¹ Much information on past wanderings and migrations in Senegambia and western Nigeria can be gleaned from the writings of Colonel Louis Binger, and from the linguistic studies of Maurice Delafosse. The Senufo group was first described by Delafosse.

the Upper Niger, the forests of Liberia and the Ivory Coast, and the western borders of the Mossi Kingdoms. The Mandingo language group has features which resemble those of inner West African speech families, and others decidedly suggestive of the far-away Nilotic division. Perhaps earlier in coming than the Mandingo conquerors were the ancestors of the Yoruba-Benin-Dahomé peoples, who under some unknown northern influence originated such remarkable arts, industries, and religious ideas, firstly in Yorubaland and then by expansion in the regions between the western delta of the Niger and the Gā country of the Gold Coast (the region round Akra, the home of the ancient and isolated Gā Negroes). North-west of the Yoruba-Dahomé stock, with its monosyllabic, tone-using languages, is the area of the Mossi tribes, who as invaders seem to have preceded the Mandingo, but to have been literally "over-ridden" by them. Their group of languages, prominent in the northern Gold Coast and North Togoland, is suffix-using and offers some resemblances to Fula in structure and syntax.

The eastern side of the lowermost Niger, from the Benue confluence downwards, was invaded—perhaps contemporaneously with the Mossi and Yoruba movements—by the Ibo and Igara tribes, and these found their "farthest south" in the colonization, about fifteen hundred years ago, of the Cross River region by the allied Efik group. Particularly noteworthy for their culture in this direction are the semi-Bantu Ekoi tribes (referred to elsewhere) and the mysterious Aroñ people of eastern Iboland (near the middle Cross River). The Aroñ people in their physical aspect suggest very strongly some ancient stranding in these Nigerian forests of semi-Caucasian invaders; and their religious beliefs resemble those of Benin and pre-Muhammadan Yoruba.

A comparatively recent tribal movement in West Africa, perhaps less than two thousand years old, brought the ancestors of the Agni-Ashanti peoples from Borgu or Barba, on the west side of the Niger north of Yoruba, right across the Dahoméan sphere to the Gold Coast and the eastern half of the Ivory Coast. Their speech—not without its suggestions of affinity with the eastern Nigerian and semi-Bantu tongues—now marches coterminously with the Kru languages of Liberia. Behind the Kru group and the Agni-Ashanti, and northwest of the semi-civilized Muhammadan-Mossi peoples, are tribes affiliated in speech to the Mossi-Gurunsi group, but wild and uncultured. Of such are the "Bobo-Fing" of Louis Binger (their discoverer), who are tall, heathen Negroes living in absolute nudity, at any rate so far as the men are concerned.

Absolute nudity in the male is a very rare condition among African aborigines. So far, these Bobo-Fing people of the very heart of western Nigeria are its only exemplars in West Africa at the present day, though I can remember in the Cross River district, in the early eighties of the last century, seeing male natives (as well as female) affecting complete nudity. Elsewhere male nudity (female nudity was, until the last few years, a very common condition throughout Negro Africa) was only to be met with among the Nilotic Negroes and their allies; and such Bantu tribes as the Ba-hima, the North Nyasa folk, the Central Zambezians, and the

Zulus, as are considered to have some strain of Nilotic or Hamitic blood in their veins.

The last important gift of Egypt to Negroland was the domestic fowl, which began to penetrate into Negro Africa after about 300 B.C. The domestic ass (not found in North Africa before Roman times) had apparently reached West Africa as an element of the Songhai civilization. It only penetrated elsewhere into Negroland up the Nile Valley, and was finally adopted as a domestic animal by the Masai and cognate tribes. With those exceptions the domestic ass was non-existent in Negroland before it was brought there in the Christian era by the Arab or the European. The woolly sheep, which in Egypt succeeded the short-haired breeds, was likewise an element in the Songhai civilization, though it also reached the Upper Niger in later times by means of the Tuaregs or Berbers. The horse accompanied the westward march of the Mandingos and the Songhai. It had also, further, reached the Central Sudan from Egypt about the same period (say, 1,000 to 500 years ago) and had become established amongst most of the Kushite peoples, but was completely unknown to the Nilotic Negroes and all the rest of Negroland.

Some such convulsion as might have been caused by the first movements of the ancestors of the Mandingo, Songhai, Kanuri,¹ and Hausa peoples gave birth to the Bantu movement. So far as linguistic evidence goes, the ancestors of the Bantu dwelt in some region like the Bahr-al-Ghazal, not far from the Mountain Nile on the east, from Kordofan on the north, or the Benue and Chad basins on the west. Their first great movement of expansion seems to have been eastward, and to have established them (possibly with a guiding aristocracy of Hamitic origin) in the region between Mount Elgon, the northern Victoria Nyanza, Tanganyika, and the Congo Forest. At some such period as about 300 B.C. their far-reaching invasion of Central and South Africa seems to have begun. The mass of them, at any rate, did not separate into streams of migrations until they received the domestic fowl from Nile-land, since, with the doubtful exception of a small portion of the western Bantu languages, the root-word for domestic fowl is the same throughout all Bantu Africa, and is obviously related to the Persian words for fowl, yet quite unrelated to the Semitic terms or to those used by the Kushites of Eastern Africa.

In a much fainter degree, Kushite influence on language may be traced to the Musgu people far to the south of Hausaland. Sexual distinctions in pronouns and grammar also make their appearance in the Bongo of the Egyptian Sudan as well as in the Masai and some other Nilotic languages. These influences may have been perhaps pre-Hamite, derived from the language of some invading white people intermediate between the Fula group and the Hamitico-Semite. Such a group has left a similar imprint (the discrimination of sex²) on the Bantu family.

¹ The Kanuri people of Bornu originated from the Tibu or Teda Negroids of Kanem, and of the Eastern Sahara. These Tibu were perhaps the Garamantes of Roman geographers. Their range in ancient times extended from Fezzan to Lake Chad.

² In the *Ka-* prefix and particle (diminutive and very feminine in tenour and scope) and in the *Nya-*, *Na-* "mother" or feminine prefix.

In my work on *George Grenfell and the Congo*, I have developed the theory that the Bantu invasions of Central Africa are divided in the main into two groups. The earliest may have been a direct east-to-west movement across the basin of the Wele-Mubangi River to the Cameroons, which ended its impetus in colonizing the Island of Fernando Pô and in the creation of the semi-Bantu languages of the Western Cameroons and Calabar district. It is a remarkable fact that there are elements in the Fernandian language at the present day which offer a certain resemblance to Bantu dialects still spoken on the north-eastern verge of the Congo Forest, while the intervening languages and others which are found near the north-eastern bend of the Congo would form connecting links. This first east-to-west migration of the Bantu (which I will discriminate as No. 1) may have gone far towards creating the quasi- and semi-Bantu languages of the Cameroons, Benue and Cross-River borderlands, languages of which the Munshi on the Benue, the Ekoi of Calabar, and the Fang of S. Cameroons are good examples. But it may well be that the more northern among the semi-Bantu tongues are descendants of the speech-family in the Central Sudan from which the Bantu group was evolved. I should be disposed to think, however, that the Ekoi speech (like the Fang languages) was of direct Bantu origin mixed with elements of some vanished monosyllabic ground-speech of West-Equatorial Africa. The Ekoi civilization, so admirably illustrated of late by Mr. P. A. Talbot, was possibly derived from that Egyptian-Roman impetus which invaded Eastern Nigeria between 100 B.C. and A.D. 500, bringing Roman beads to Hausaland and the Gold Coast, the pattern of Roman oil-lamps in metal as far south as the Baya country of the North Cameroons, and creating the wonderful art and the strange religions, idols, and metal-work of Borgu, Yoruba, Benin, Iboland, and Calabar.

The second and the principal line of Bantu migration (No. 2) at first skirted the dense Congo Forest on the west, penetrated round the Victoria Nyanza and down both coasts of Tanganyika. From the region between the Victoria Nyanza and Tanganyika a great stream (No. 3) of conquering peoples must have swept eastwards to the Zanzibar coast, while a thinner migration (No. 4) came from Kavirondo eastwards and occupied the Kikuyu highlands and the slopes of Kilimanjaro and Kenya. In the actual coast belt, north of Mombasa, the Bantu invaders have had to fight their way northwards—being often exterminated and pushed back—against the pre-existing Kushite, Nilotic and even Sudanese, Bushman, and Hottentot peoples.

Dotted here and there over Eastern Africa, south of the Equator, are mysterious little groups of Negroes speaking languages that offer no marked relationship with any other. Such tongues as the Bakumu of the North-east Congo bend, the Sandawi, Mbulungu, and the Mbugu of German East Africa may be confined nowadays to a few thousand or a few hundred people in a little group of villages. They are evidently the relics of many unrecorded Negro colonizations of East Africa. All Bantu Africa of to-day, except the heart of the Congo Forest and the regions south of the Zambezi, must have been more or less thickly populated

before the Bantu impressed with extraordinary rapidity and completeness their own type of language on the tribes they conquered. There are faint indications of people of pre-Bantu speech having existed in South-east Africa, south of the Zambezi; pre-Bantu, but not Hottentot or Bushman. There are small enclaves of non-Bantu people on the Northern and North-eastern Congo. These latter languages are distantly connected with isolated families of speech in the Southern Bahr-al-Ghazal and the Egyptian Sudan, and may be classified with vagueness as "Sudanese," and distantly affiliated with the Nyam-Nyam and Mangbettu groups.

From the west coast of Tanganyika the Bantu migrants are divisible into three main groups (Nos. 5, 6, and 7), which may have set out almost concurrently. The most northern (No. 5) pushed its way along the main stream of the Lualaba-Congo and crossed over from the Western Congo to the Cameroons coastline, where it fused in speech and culture with the descendants of the first great east-to-west Mubangi-Cameroons invasion. The second section of the Tanganyika Bantu (No. 6) conquered and colonized Southern Congoland—the Luba and Lunda territories, Angola, and what came to be known as the kingdom of Kongo, expending the last of its force in Loango, to the north of the Congo mouth, where it encountered the southernmost range of Yoruba-Benin culture. The third and most southerly section of the West Tanganyika groups (No. 7) may have received some great reinforcement from the east or north, a reinforcement accompanied by the straight-backed, long-horned cattle and the fat-tailed sheep. This section originated the remarkable Herero people of Damaraland and the tribes of Northern and Central Zambezia. But the Herero section early specialized itself when it got to the west of the Upper Zambezi. It colonized Southern Angola (leaving here and there an unassimilated element) but developed its most marked characteristics of speech and culture in South-west Africa, where it was obliged for centuries to fight against the Hottentots, Bushmen,¹ and a pre-existing Negro type which had already accepted a Bushman form of speech. This was the Berg-Damara or Ova-Herero, a people that in physique are typically Bantu (generalized Negro with a suggestion here and there of the Forest Negro), but in speech are Bushman or Hottentot. It has been suggested by some that the Ova-Herero (called Dama by the Hottentots) may be the Ma-tama described by the Portuguese as existing in Southern Angola in the 16th century.

Another great Bantu migration (No. 8) descended from the south of Tanganyika and occupied Eastern Zambezia, Nyasaland, and Mozambique. These were the ancestors of the great Nyanja, Yao, and Makua groups, and of the Karāña peoples of Southern Zambezia. A considerable stream of tribes (No. 9), speaking primitive Bantu languages, made its way in successive waves down the east coast of Tanganyika, reached to the north coast of Lake Nyasa, and penetrated finally

¹ Or the mysterious, little-known, Bushman-like tribes of the westernmost limits of the Zambezi basin: the Kankala, Kasekere, Ma-kwengo, and Ma-sarwa.

along the Rufiji and Ruvuma valleys to the shores of the Indian Ocean, where it has left its traces in the Makonde people.

From out of tribes of the 3rd group the Arabs of South Arabia, who had certainly settled sporadically along the east coast of Africa before the Christian era, built up the Swahili people and the Swahili language, which bids fair to become the *Lingua Franca* of all Bantu Africa.

But the most mysterious of all the Bantu migrations (No. 10) is that which created firstly the Bechuana people, and secondly the Zulu-Kafir tribes. Although the Zulu-Kafir group is the most isolated of all divisions of the Bantu speech family, it possesses marked affinities with the Sechuana group and less marked relationships with the Ochi-Herero (No. 7). On the whole its relationships beyond those tongues might be described as East African and Central African. It would seem as though the ancestors of the Bechuana and the Zulu rushed down from East-central Africa in one of those great raids which they have repeated and made so familiar to us in the course of the 19th century, and passed over the heads (so to speak) of the earlier Nyanja and Karaña tribes of Zambezia and Nyasaland. They first settled in South-central Zambezia, and then penetrated down the Limpopo River into South-east Africa, passing up the coast as far north as Inyambane, and conflicting here with the pre-existing Karaña invasion, and with still earlier settlers who may not have been of Bantu speech. At all events a considerable body of these Bechuana-like people passed south through Swaziland across the Drakensberg Mountains into Zululand, Natal, and what is now the eastern part of Cape Colony. Shut in from the north by the great ranges of lofty mountains, and thus cut off from intercourse with their Bechuana relations, yet having somewhat more intercourse with the tribes of Nyanja-Karaña stock on the north-east—they developed a type of language which in a large proportion of its vocabulary is absolutely original and self-developed. At the same time they found in the lands along the coast of the southern Indian Ocean a considerable Bushman population.¹ They probably killed the Bush men and espoused the Bush women; and the Bush mothers imparted to the children of their Bantu husbands three or four of their ugly clicks,

¹ It has been questioned by some authorities whether there were ever any Bushmen in Zululand and Amatongaland, because no Bushman paintings have yet come to light in easternmost South Africa; and yet there is an obvious strain of Bushman blood in the serf (not the high class) population of Zululand and South-east Africa. May it not, however, be a misleading idea on the part of some ethnologists that wherever cavern paintings are found in Africa and South-west Europe they are to be attributed to the presence of a former Bushman people in those regions, and conversely that where in South Africa no cavern paintings exist, in such regions there have been no Bushmen? So far as I am aware, cavern paintings are only met with in the centre of southernmost Africa and in great Namakwaland, and some are associated with the pre-Bushman, Strandlooper race. No paintings or rock engravings have as yet been discovered due north of the Kalahari Desert, in South-west Africa, where, nevertheless, Bush tribes exist to this day. The Strandlooper may have introduced this imitative art into central South Africa and have taught it to the Bushmen. In all probability the ancient graphic arts of Northern Africa and Western Europe were the work of Palæolithic proto-Caucasians or Neolithic Caucasians. Somewhat similar work was done by the Australoids of Australia and the vanished, blond Neolithic race of Western Siberia.

which disfigure the Zulu-Kafir speech to this day. The Bechuana peoples between the Orange River and the Drakensberg on the south and the Limpopo and Ngami basin on the north, also seem to have been rather isolated for a time and thus to have developed marked linguistic peculiarities. According to their traditions their ancestors crossed the Zambezi from the north about the 14th to 15th centuries A.D. They did not hesitate to mingle with the pre-existing Bushmen, but were little influenced in their speech by the click languages. This has only occurred in the southernmost part of their range—Basutoland.

Before passing to the consideration of the recent migrations of Caucasian peoples in Africa, we might touch on an invasion of Central Congoland which had a profound influence on Bantu Africa: I refer to the "Bushongo" (or more correctly, Bashi-bushongo) civilization of Central Congoland made known to us and made famous by the splendid work of Mr. Emil Torday and his collaborator, Mr. Athol Joyce. On such evidence as Mr. Torday has placed before us, we may hazard the guess that the ancestors of the Bashi-bushongo (these words seem to mean in Bantu the "fathers"—bashi—"of the metal-spear-blade"—bushongo) came from the region of the Shari River about A.D. 600, say 1,300 years ago. They were a type of Sudanese Negro with a considerable infusion of Hamitic blood in their veins, and spoke a language apparently belonging to the vaguely-defined Central Sudanese group represented by some of the tongues still extant on the Shari River and in Baghirmi. In fact, they may have derived some of their inherent culture from the relatively old civilization of Baghirmi. No doubt much Egyptian influence of an indirect kind passed from Lake Chad up the Shari and Logun Rivers, as it similarly reached the Upper Benue. The ancestors of the Bushongo according to their traditions would seem to have crossed the Mubangi River and the main Congo, and to have made their way to the Sankuru and the eastern basin of the Kasai. Here they met with an aboriginal race of pygmies and with the Bantu invaders of Nos. 5 and 6 (No. 6 is that of the Luba-Tabwa tribes). The Bushongo finally abandoned their own Sudanese language and assisted to create a very corrupt form of Bantu speech (quite different from the beautiful Luba tongue) which they use at the present day. But they perfected in the very heart of Congoland the arts of working metals, plaiting and weaving, and developed, in conjunction with the Baluba (whose inspiration came from the highlands north of Tanganyika), a culture which is most remarkable in comparison with the savagery round the innermost circle of the Congo basin. In their magnificent physique the Bushongo aristocrats bear to this day traces of the Caucasian element which must have reached their far-back Negro ancestors from North-east Africa. Once well established in the heart of Congoland their influence, conjoined with that of the Baluba, radiated over their Bantu neighbours to the west and south, so that finally through the Awemba people it penetrated to the regions north-west of Lake Nyasa, or even farther south still to the Central Zambezi.¹

¹ Mr. Emil Torday thinks that the Bushongo came only as warriors to take possession of a portion of civilized Lubaland, and that the Baluba brought from the east or north-east the arts

There has evidently been an old civilization in what may be termed the Butonga country of Barotseland, and perhaps also in Katanga and on the coasts and islands of the northern half of Tanganyika. In both these regions there are—or were—remarkable breeds of domestic fowl—those of Butonga (the so-called "Makololo" fowls) being of small size, but of extraordinary prolificness in laying, while the fowls of North-west Tanganyika were a giant breed more like the Cochin China. In Butonga also there was a remarkable breed of pygmy cattle, only 3 feet high.

The influence of the Bushongo-Luba led, no doubt, to the creation of great Bantu empires such as that of Lunda, which spread over the Luba countries towards Tanganyika and Lake Mweru. But the empire of this Mwata Yanvo only arose—as far as I can ascertain—about the 16th century. Its growth seems to have followed on one of those racial eruptions in Negroland which baffle explanation and seem incredible had we not witnessed similar ones in our own day in the northward raids of the Bechuana and Zulu peoples. Early in the 16th century a cannibal people of Bantu speech, but with little or none of the Bushongo or Luba civilization about them, suddenly boiled over, and devastated much of Western Congoland and Angola, of Central Zambezia, and of East Africa. These were the Jagga and the Ba-zimba of the Portuguese. Their descendants—still a somewhat truculent folk—are the Imbangala of the Upper Kwango, and the Ba-jok of Mr. Torday, the Va-kioko or Va-chibokwe of Livingstone, Cameron, and Swan. Their devastations on the north almost overwhelmed and exterminated the semi-civilized kingdom of the Congo, which had already come under Portuguese influence. They occupied much of Angola, and after swarming across the Zambezi-Congo water-parting, they surged down the valley of the Luangwa until they came to the northern bank of the Zambezi opposite Tete. Here they fought for years with the Portuguese, who eventually got the better of them, though they practically wrecked Portuguese Zambezia for half a century. But one body of these dreaded Ba-zimba¹ fought their way northwards through South Nyasaland and the Yao countries till they crossed the Ruvuma and laid siege to the Portuguese-Arab town of Kilwa. This they finally took and sacked, and ate thousands of their prisoners. Then they continued their ruthless course till they similarly encamped on the mainland west of Mombasa. Only by desperate efforts did the Portuguese, allied with the local Negroid tribes of Gala affinities, defeat them here. Their defeat led no doubt to their practical annihilation, for they seem to have left no traces behind in this region.

Let us retrace our steps in the prehistory which is founded on archaeological research and in the history which is derived from written records, and consider the of metal working, weaving, etc. There certainly was, many centuries ago, a remarkable Bantu civilization, emanating from the Ruanda and Tabwa countries (north and west of Tanganyika), and extending south to metalliferous Katanga.

¹ It is said by French missionaries such as Arbousset that another section of the Ba-zimba wandered across Matebeleland to the Limpopo and became the ancestors of the Bavenda tribe, and introduced the custom of cannibalism amongst the south-eastern Bechuana peoples. The Chi-venda language, the most interesting and purely Bantu in South Africa, is, however, of East African affinities.

effect on Africa of the Semitic invasions and settlements. Here again, as in the term "Hamite," designation is of linguistic rather than racial import. Several distinct types of Mediterranean white man—the Aramæan (Jew, Assyrian, Phœnician), the Armenian, and the Arab; the Kurd; besides the negroid Elamite and the brown-skinned Hamite and Mongoloid Sumerian: have fused partially in the composition of the white men of Semitic speech. These composite types of Semitic race—more European in physique, for the most part, than the Kushite Hamites, less so than the true Berber—have colonized Africa at intervals from about 6,000 to 7,000 years ago. At some such distant period as about 4500 B.C., Semitic settlements were apparently being formed in the Isthmus of Suez and the Nile Delta. About 4,000 years ago began the great Hyksos or Haqshu invasions of Egypt, which for more than 500 years paralysed the power of the Dynastic Egyptians. These "shepherd kings" may have been akin to the Arabs in their pastoral stage, though some Egyptologists think there was an admixture of Turk or Turkoman or even of the Medes (Skythian Aryan). Their use of the horse suggests a Central or West Asian influence, but their speech seems to have been Semitic. Their migration from Syria took place before the domestication of the Arabian camel, but they brought the horse with them as a draught animal. When Pharaonic dynasties had regained power and overcome these barbarians, some of the survivors of the Hyksos probably retreated into Midian and Arabia and fused with the Arabs; others must have contributed to the complex elements of the residential Egyptian population. There is no need to suppose that any large body of them went westward to form the Fula or the Songhai peoples. At least there is not the slightest evidence as yet to support this conjecture.

We may hazard the guess that an important Neolithic civilization had remained behind in South-west Arabia even after the departure of the Dynastic Egyptians; that this peninsula became gradually Semitic in religion and language; and that having sent one of its peoples—the Phœnicians—the "Pun," perhaps of the Egyptian Pun-t or Puanit—from the Persian Gulf to the Syrian coast, and hordes of Himyarites to colonize Abyssinia, it still possessed sufficient energy in its west Arabian states of Saba and Mina to explore the east coast of Africa, perchance in boats with mat sails like the existing "mtepe" of Zanzibar. I see nothing inherently improbable in the finding of gold by proto-Arabs in the south-eastern part of Zambesia; nor in the pre-Islamic, Arab origin of Zimbabwe.

In any case we know from the *Periplus of the Erythræan Sea*—a compilation dating back to the 1st century of the Christian era—that at that time the Arabs of the south-west corner of Arabia traded with the Zanzibar coast. Probably by this time, or soon afterwards, their ships had found the north end and east coast of Madagascar. Here they introduced, before the Islamic period, the use of their Himyaritic dialect, and thither they conveyed (from Bantu Africa opposite) the long-horned cattle and the domestic fowl. From various indications one is entitled to believe that the East African coast was brought by Arab sea-trade into touch with India, and even China and Malaysia, as much as 2,000 years ago, if not

earlier. I think Arab ships introduced the cultivated banana¹ (whose nearest wild relation grows in South-eastern Asia, not in Africa) into East Africa, whence it spread from tribe to tribe right across Equatorial Africa to the West Coast. They also introduced hemp from Asia; possibly also the cotton plant and the sugar-cane, rice and wheat. The Arabs may also have brought the domestic fowl from Persia or India to East Africa and Madagascar. They conveyed cattle of the long-horned ancient Egyptian type into Madagascar, and certainly brought thither, early in the Christian era, numbers of Negro slaves from the Zangian and Moçambique coasts.

The "Carthaginians" of course originated in the Phœnician settlements of Sidon and Tyre on the coast of Syria. They established themselves on the coasts of Tunis and northern Morocco about 1100 B.C. But the real growth of their power and colonization only dates (it may be) from the foundation of Carthage in 822 B.C. A good deal of the coastlands of Tunis and western Tripoli was actually colonized by the Phœnicians, who left many monuments behind which testify to their former presence there. They undoubtedly opened up trading stations along the Atlantic coast of Morocco, and in one or more voyages penetrated to the mouth of the Senegal, and even to the southern limits of Sierra Leone.² They seem to have got in this way into relations with the Fula and Wolof peoples, and to have used Fula interpreters³ to communicate with the shy, black Negroes. Their farthest-south permanent trading station on the west coast was the little island of Kerne (still called Herne) in the narrow gulf of the Rio de Oro. This region has for some years been in the possession of the Spaniards, and it is surprising that no excavation or research work has been made in Herne Island. The archaeological results might be of the highest interest. No doubt, even as far back as 1000 B.C., a certain amount of overland trade went on between North Africa and the Western Sudan, but such trade probably only followed the Atlantic coastline. Several of the more important oases of the Sahara seem to have become uninhabited. In fact, the Neolithic population of the Sahara would appear to have died out, no doubt owing to the increasing drought. But there is nothing in the culture or the languages of West Africa to suggest any great amount of intercourse between the Carthaginians and Negroland, after Hanno's celebrated voyage to Sierra Leone in the 6th century B.C.

Things became a little more active when the Romans displaced the Carthaginians in North Africa. In the early part of the Christian era they—the Romans—had crossed the Atlas Mountains of Morocco, and had sent expeditions far down into the Sahara Desert from Tripoli, probably to Bilma. They were

¹ This may even have been brought by Malay canoes across the Indian Ocean to Madagascar and the Comoro Islands. The earlier Arab writers on East Africa between the 10th and 13th centuries mention both Lamu on the North Zangian Coast and the Comoro Islands as special centres of banana cultivation.

² Mr. Frederick Migeod, in his *Languages of West Africa*, suggests from certain evidence that the Carthaginians were in touch by sea with the Gold Coast.

³ A deduction made by the French colonial administrator and historian, M. Louis Binger, on fairly good grounds.

assisted in this last direction by the Garamantes, who were perhaps Tibus. But it would seem as though the Roman beads which turn up all over West Africa and the Sudan had entered Negroland through the Egyptian trade across Nubia, Darfur, and the Lake Chad region.

The Jews both before and after the opening of the Christian era took up the work of their kindred, the Phœnicians. They established themselves in such numbers in Cyrenaica that they practically ousted the Greeks; indeed, in a Jewish uprising of A.D. 117 the Greeks of this old Greek colony (now Italian territory) were almost exterminated.¹ The Romans retaliated by killing the Jews, but the Jewish settlements at Carthage and elsewhere in Tunisia and in Morocco prospered mightily under Roman rule; or rather outside the limits of Roman rule amongst the Berber princes, many of whom became converts to the Jewish faith. The Jews played a great part in the history and development of North Africa in those days. They instigated the Berbers to oppose the Arab invasion and to assert their independence against the Vandals. The Arabs and Berber historians of North Africa even state that it was the Jews who, in their trading enterprise, first occupied or re-occupied important oases in the Northern Sahara such as Twat. They may possibly have found still living at Twat a Negro or a Negroid race, and unquestionably they were not the first inhabitants of any Sahara oases. But they seem in many directions to have preceded the Berbers in their south-west migrations. Some of these Jews are thought even to have crossed the Sahara, carrying with them a garbled blending of the Jewish and Christian faiths, and to have reached the country of Borgu to the south of the Central Niger, establishing there a form of religious faith which has only recently given way to Islam. Jews, however, early in the Christian era (according to traditions gathered up by Arab historians) made their appearance in the Mandingo kingdoms of Ghanata and Melle and at the capitals of the Songhai empire which followed. On the eastern side of Africa, Jews or Idumœans had evidently settled in Abyssinia several centuries before the Christian era, and many of the Jews of Arabia migrated to Abyssinia after the establishment of Islam.

The other Arab invasions of Africa before the Christian era were restricted to occasional settlement on the west coast of the Red Sea and in Somaliland, and to the trading colonies on the Zangian coast already described. But after the first Islamic convulsions in Arabia, Arabs began to pour into Lower Egypt from the direction of Syria. Thence they passed at the head of conquering armies through the Tripolitaine into Roman Africa and Morocco. Allied with the Berbers they descended in thin streams the Atlantic coast of the Sahara till they reached the Senegal River in the early part of the 10th century. Other bands of them found

¹ There would seem to have been a Pelasgian, Minoan, or early Greek colonization of Eastern Tunisia, and the Greeks, as we know historically, founded a prosperous colony in Cyrenaica as early as 631 B.C. It is possible that through the intervening Berbers and Tibus, Greek influence to a slight degree penetrated (in objects of trade) across the Sahara Desert into the Sudan.

their way from Arab Egypt along the old trade route to Darfur, and commenced the Islamizing of the Central Sudan, from Bornu to the Niger. But the great invasion of Northern Africa and the Sudan by Islamic Arabs did not take place till the 11th century—that invasion which is named the Hilalian by French writers. This was the result of the driving out from Arabia of two turbulent tribes, the Beni Soleim and the Beni Hilal, who crossed the Red Sea, forced their way through the Hamitic peoples of the Nubian Desert, and settled on the Nile in the Cataract region. From this direction many of them made their way in succeeding centuries across Darfur to Wadai, Bornu, and Baghirmi, where they are represented at the present day by the Shawia. Others, again, mingled with Hamitic and Negro elements and founded the powerful Funj dynasty of Senaar.

A large proportion, however, of this Hilalian invasion in the 11th century was directed by the decadent power of Arabized Egypt (under the Fatimite puppet-Caliphs) towards Mauretania. Northern Africa, when it ceased to be Græco-Roman, was becoming practically a series of Berber principalities which retained Arabic as their official language and remained Muhammadan in religion, but were inclined to enter into friendly relations with the European States across the Mediterranean. But the Arab character of North Africa and the Muhammadan fanaticism were sharpened by this Hilalian invasion, which planted in Tunis, Algeria, Morocco, and the Western Sahara hundreds of thousands of Arabs, who have retained to this day their racial characteristics, except where they have mingled with the Negroes. Thus there are Arabic-speaking tribes along the northern Senegal and within the Western Sahara.

The Islamic Arabs had resumed intercourse with the Somali and Zangian coasts as early as the 8th century A.D. According to their historians, ships from India or Malaysia were trading soon afterwards with the natives of (what we now call) the Angoshe district of Moçambique for iron; and making use of the Comoro Islands as trading depôts. By the 11th century of this era the Arabs were established at Kilwa and as far south as Sofala. Soon afterwards they formed a settlement at Sena on the Lower Zambezi, and their influence and culture probably went far towards the creation of the powerful Negro empire of the Monomotapa. The arrival of the Portuguese, however, arrested for a time the Arabizing of East Africa, though the Arabs had already got into touch with Unyamwezi and Lake Nyasa. They were reinforced at different periods after the 11th century by colonies of Persians from Shiraz, and these Persians introduced much culture into the East Africa coastlands between Somaliland and Kilwa.

Although the Islamized Berbers of the Sahara Desert—the so-called Tuaregs (this nickname is itself of Arab origin, from *Tarqi*, a raider)—had after the first Arab invasions of Mauretania pushed farther and farther into the Sahara Desert (often, in the oases, preceded by Jews), and had in the 12th century founded or refounded Timbuktú and given a Caucasian reinforcement to most of the Negroid tribes and dynasties in the Central and Western Sudan, their civilizing work was hardly to be distinguished from that of the Arabs who accompanied them, or who

supplemented their efforts in introducing everywhere throughout the Sudan (north of the forest belt) the religion, the language and culture of Arabia. On the east coast of Africa a great revival of Arab emigration took place after the decline of the Portuguese power in the 17th century. The Arab cause was taken up by the bold seafaring traders of Oman in South-east Arabia. The Portuguese were driven from all their positions north of the Ruvuma River by the 18th century. In the 19th century, from the Arab metropolis of Zanzibar, East Africa, as far inland as Tanganyika and Nyasa, was considerably Arabized. Arab adventurers reached even to the extreme Upper Zambezi, concurrently with Livingstone, besides discovering the Upper Congo. Besides this, a pre-Portuguese element of Arab settlement continued to exist, and exists still, in the southernmost part of the Moçambique region, chiefly the district of Angoshe.

Arabs from Syria and North Africa, together with large contingents of Berbers from Algeria, Morocco, and the Northern Niger, had colonized Spain between the 8th and the 11th centuries. Here they had mingled with Jewish and Christian elements, and the amalgam of all these strains produced a magnificent human type of great physical beauty and a tendency towards whiteness of skin; a most talented people, artistic to their finger-tips, passionately fond of music, clever at mechanics, industrious in agriculture. Chased out of Spain because of their imperfect acceptance of Christianity and their inherent dislike of Castilian rule, these Rumas—as they were styled by the people of North Africa—or “Andaluzi” became to Muhammadan Africa what the French Huguenots were to England, Ireland, and Holland. They brought into Africa the bravery, the ideas of discipline, and the cultivated mind and artistic instincts of the European. They became the sharpshooters, the artillerymen of the Moorish Empire, and were the main agents in carrying the rule of Morocco to Western Nigeria. As a civilizing element on the Upper Niger, and even as far south as Senegambia, they cannot be overrated. They also figured considerably in the founding of the Fula kingdoms, and the eventual Fula empire, even as far east as Bornu, and as far south as Baghirmi. A colony of them also settled at or near Lamu on the equatorial East coast of Africa, and their descendants assisted the Maskat Arabs to expel the Portuguese.

Amongst the many race movements due to the influence of the Muhammadan religion were those of the Hausa and the Fula. The Hausa-speaking Negroes of the Central Sudan, by their industry and intelligence (helped, however, largely by the unconscious gospel of art and agriculture, preached by the dark-skinned Caucasian hybrids who have permeated this region for about two thousand years, and perhaps long before), had founded important states between the Benue basin and the Sahara Desert; and their trading language and influence by the 16th century had crossed the Niger and travelled westward over the semi-civilized kingdoms of the Mossi group of Negroes, until they were stayed from any further western progress by the equally potent Mandingos. The Hausification, so to speak, of all these regions of the Central Sudan prepared the way for the establishment of the three remarkable Fula

empires over West, Central, and Eastern Nigeria which have only been replaced of late by French or British rule.

The ancient history of the Fulas has already been alluded to. Their original home, according to Arab-Berber tradition, was in the western oases of the Sahara, the valley of the Draa, the hill country of Adrar, and the Atlantic coast of the Sahara Desert. They may have been the "Pharusii" of Roman geographers. The Berber emigrations which resulted from the wars of conquest of the Romans, followed by the convulsions due to the invasion of Mauretania by the Islamic Arabs, are believed to have driven the Fulas south towards Senegambia, their place being taken by Berbers and Arabs. They were at first quiet people, herdsmen and shepherds, with a high and intricate type of pagan religion which still survives in parts of Nigeria. But large numbers of them became converted to Islam from the 12th century onwards and gained some knowledge of the world outside Africa by their pilgrimages to Mekka. In Senegambia they came gradually to form proud little principalities of Muhammadan people; which, often assisted by Arab and Moorish adventurers or fakirs, finally dominated the basin of the Upper Senegal at the close of the 18th century. Their colonies and wandering gypsy tribes of cattle-keepers, however, had long before this penetrated to Borgu (at the back of Yoruba), and to most parts of the Sudan within the Niger basin. They had even penetrated as far to the east as the Shari River and Darfur. At the end of the 18th and the beginning of the 19th centuries an uprising of Muhammadan fanaticism and a proud consciousness of their racial superiority to the mere Negro (a principle they had learnt by their pilgrimages to Mekka) armed them as an aristocracy to wrest the political control of all Nigeria (between the Futa Jallon highlands and the Upper Benue) from the hands of Negro rulers or the decaying power of the Tuareg and Songhai. The Fula conquests effected little or nothing against the eastern Mandingos or the powerful and warlike Mossi group of Muhammadan Negro states; but made them completely dominant in the basin of the Middle Niger and the Upper Benue. The pure-bred Fulas were at least semi-Caucasian in physique and brain; and this race was all unconsciously carrying on the Caucasian invasion and penetration of Africa.¹

¹ Since the discussion on my paper (verbal, and in Mr. Morel's paper, the *African Mail*) I will sum up my views on the Fula as follows:—Very little material is still available for the definition of the precise physical type of their purest breeds. Those I have seen myself in Portuguese Guinea, the Gambia and Sierra Leone, and in French West Africa struck me forcibly with their likeness to very good-looking Arabs, the Arabs of Western Arabia. Their complexions were no darker and their hair was in long ringlets. Though betraying the same ancient "negrification" that is to be seen in so much of the North African population and in that of Egypt, they were emphatically a three-quarter Caucasian race, the one undoubted touch of the Negro being the kinky hair. It is strange that so handsome and remarkable a race should be almost unrepresented in the books and museums of Europe by any good series of photographs.

According to the best authorities of the 19th century the purest-blooded, most Caucasian-looking Fulas are or were to be found in what is now French West Africa, between the Upper Senegal and Upper Gambia and the "lacustrine" Niger (Jenné also in Borgu

There remain five other noteworthy racial migrations in Africa and its great adjacent island of Madagascar which should be described before we close this survey at the last phase: the recent invasion of the dark continent by the white peoples of Europe. These five would be (1) the Malay colonization of Madagascar; (2) the southern and south-eastern migrations of the Nilotic Negroes; (3) the northward movement of the Hottentots in South-west Africa; (4) the northward raids of the Zulus and Bechuana in South-central and East Africa, and (5) the descent of the Fang tribes on the coast lands of the Gaboon and South Cameroons.

(1) The colonization of Madagascar by a race or races which came thither in prehistoric times right across some 3,500 miles of open Indian Ocean from Sumatra or Java, in apparently nothing better than outrigger canoes, must remain one of the most astounding adventures in the history of man. Yet there are the Malagasy tribes of Madagascar at the present day, speaking one single language which has no deep-seated differences between its dialects, and which bears the unmistakable signs of its kinship with the Malayo-Polynesian tongues. It has been evolved much earlier

(between Gao and Yoruba); and among the semi-nomad herdsmen or "Cow" Fulani of British Nigeria from Hausaland to Lake Chad. According to Denham, in 1825 there were communities of very pure-blood pagan Fulas in the Mandara country, south of Bornu. Most of the conquering and ruling Fulani of the 19th century, more especially in British Nigeria, are so mixed with Hausa blood that they are more Negro in physique than anything else.

Although the religious beliefs of the pagan Fula are described as of a lofty mysticism, very little exact information has been published about them. The Western Fulas became Islamized comparatively early in the history of the Arabization of West Africa—say in the 10th to 14th centuries of this era. The West African Fulas have always shown a great sympathy for and interest in the Arab, and have furnished a large proportion of the "Takaruri" pilgrims to Mekka. On the other hand, the original eastern Fulani of Bornu and Baghirmi (apart from the Fula conquerors who came from the Northern Niger under Sheikh Omar in the early 19th century) have shown themselves hostile to Islam and to the Arab.

The trend of migration—at any rate during the Christian era—has been from west to east, if one may go by the evidence of the existing Fula dialects, that of the regions between the Senegal and Niger being apparently the mother-speech.

The physical type of the pure-bred Fula would seem to be definable as follows:—Tall of stature (but not gigantic, like the Nilote and South-east Sudanese), olive-skinned or even a pale yellow; well-proportioned, with delicate hands and feet, without steatopygia, with long, oval face, big nose (in men), straight nose in women (nose finely cut, like that of the Caucasian), eyes large and "melting," with an Egyptian look about them, head-hair long, black, kinky or ringlety, never quite straight, hair of body almost absent except at pubes and axillæ (that is to say, the body is not hairy as in most Berbers and in the Forest Negroes), but a fairly abundant beard and moustache in the men. No Negro skin odour (in the pure-blood Fula).

Their original culture was mainly pastoral. They seem to have originated no architecture or industries. Their domestic animals and cultivated plants were just those of the Northern Sudan and of indirect Egyptian origin. They did not have the plough or the Libyan chow-like dog and ignored the use of stone for building. Their language—most highly developed—betrays absolutely no structural affinity with the Semitic or Libyo-Hamitic groups, or with any other speech families outside Africa, except in the principle of "class" distinctions (which it shares with many Negro speech groups). The Semitic and Berber vocabulary elements in Fula are all borrowed words of comparatively modern use, due to the introduction of Muhammadanism. Such affinities as Fula may have with other speech families are confined to the class languages of West and Central Africa, including Bantu.

than the actual Malay language, which is a comparatively recent birth of time; but the general affinities of the Malagasy speech with the Malayo-Polynesian group are undoubted. In physique the people of Madagascar vary from the almost Negro Sakalavas on the west and the Betsileo, Tanala, and Ibara on the south, to the straight-haired, short-statured Javanese-like Hovas in the centre and east. Along the north coast there is clear evidence of ancient intermixture with Arabs and Hindus, while, of course, there is much Negro blood in the west. On the whole, however, the people of Madagascar bear a remarkable resemblance to the different types of Mongoloid and Melanesian inhabitants of the Malay Archipelago and Papuasia.

We may surmise that as soon as the enterprising Indonesian immigrants into Malaysia, three to four thousand years ago (or more), began to affect the Mongolian-Melanesian-Negrito savages with their Caucasian energy and daring spirit of adventure, Malay voyages in outrigger canoes with mat sails (like those of Polynesia) may have extended across the Bay of Bengal from Sumatra to Ceylon and Southern India, and later to the Maldiv and Chagos Archipelagoes. But there is as yet no historical or archaeological evidence of such Malay voyages.

There are indications of an ancient human habitation of the Séchelles Archipelago, but not to any great extent. These equatorial islets were without inhabitants or traces of inhabitants when first discovered by the Portuguese and French. There is absolutely no evidence of any ancient human settlement on Rodriguez, Mauritius or Bourbon (the Mascarenes), or on the Aldabra group, or even the Komoro Islands. This last string of volcanic islands which lies between the Zangian coast and Madagascar and which may be the submerged remains of a great peninsula that nearly connected Africa with Madagascar in the Miocene and Pliocene—nearly, but not quite—does not seem to have received a Malagasy population but to have been uninhabited until it was discovered by Arab ships about 2,000 years ago or more, discovered and partially settled by Arabs and by the Negro slaves they brought thither from the mainland. These slaves must have been of fairly recent importation—perhaps since the Islamic period began, for the dialect they speak is nearly related to the Swahili of Zanzibar, though to an archaic form of Swahili.

The Malay colonization of Madagascar therefore, though very thorough and several times repeated, was singularly limited in its scope, since the Malayo-Polynesian adventurers apparently never reached the Mascarene Islands or the Komoros,¹ or Zanzibar or the Zangian or Moçambique coasts. Once they had landed on Madagascar they appear to have abandoned sea-faring habits; and though they retained the outrigger canoes they never ventured in them far from shore. The outrigger canoes were afterwards introduced by the Arabs into the Komoros and to the Island of Zanzibar, but were never spontaneously adopted by the Bantu

¹ There is a good deal of Malagasy blood in the Komoros to-day, but it is due to comparatively recent immigration and the slave trade of the 18th and 19th centuries.

Negroes of the East African coast. According to tradition there have been repeated Malay invasions of Madagascar, the earliest perhaps about 3,000 years ago: the latest that of the Hovas in (some suggest) the 7th century of the present era.¹ The Hovas instinctively fought their way through the antecedent peoples of the east coast-belt till they reached the healthy plateaux of the interior. Here in the course of some hundreds of years they became a warlike, vigorous nation which in the early 18th century set out to conquer all Madagascar and would have succeeded, but for French interference. The Hovas have kept their Malay racial characteristics much more than the Betsileo, Sakalavas, and other tribes of earlier arrival. The Sakalavas have evidently mixed much with the Bantu Negroes of the East African coast. A number of words of Bantu origin have been imported into the Malagasy dialects, but more into those of the west coast than into the speech of the Hovas. Still the dialectal differences in Malagasy are slight and point to a certain racial homogeneity. There is, *per contra*, not the slightest trace of Malagasy influence or blood among the peoples of East Africa. There is a tradition in East and South Madagascar that the earliest Malay immigrants found a preceding Negro or Negroid race still existing in the land. These are generally called the "Vazimba," and in many districts mounds of seemingly artificial origin are called "Vazimba graves." But although both French and English explorers have made such remarkable discoveries of a fossil and sub-fossil fauna in Madagascar, they have either never troubled to investigate these alleged sepulture places of an ancient and vanished race of Negro type which may have preceded the Malagasy; or they have found nothing to support the theory of the existence of a pre-Malagasy population. The word "Vazimba" may have been introduced by the Arabs at the time the cannibal Ba-zimba hordes were ravaging the opposite African coast. But it is difficult to believe that the actual, historical Ba-zimba, who had no canoes with which to ford the Zambezi at first, and were thwarted in their attack on Mombasa because it was an islet separated from the mainland by a narrow tidal creek, could have found the means of crossing the 300-miles-wide Moçambique Channel and invading Madagascar at the time when the Portuguese held command of these seas. Considering, moreover, that neither the Bantu Negroes of East Africa nor the Bushmen who preceded them were possessors of any better means of navigation than dug-out canoes or rafts, it is difficult to believe in an ancient Negro peopling of Madagascar before the Arabs could serve as transport agents. Of course it is just possible that the mysterious race that built the Zimbabwe² walls and temples and commenced mining for gold in South-east

¹ In the opinion of the late Professor A. H. Keane, who has given an excellent *résumé* of the question in his *Man: Past and Present* (1899), the Hova departure from Java or Sumatra must have been much earlier than only twelve hundred years ago. The reader is also referred to *Madagascar, etc.*, by E. F. Gautier, Paris, 1902.

² There is seemingly no etymological connection between *-zimba*, a Bantu tribal name-root applied amongst others to the cannibal raiders from Southern Congoland in the 16th century), and *Zim-babwe*, which simply means "stones" in the Karāna dialects, from *-babwe*, *-bawe*, a stone, and *Zin-*, a plural prefix.

Africa may also have invaded Madagascar. But in such case they are more likely to have been pre-Islamic Arabs or Hamites rather than Negroes.

It has been stated by Capitaine M. Guillain, Sir Richard Burton, and other writers on East Africa in the middle 19th century that Malay sailing vessels have been blown by strong easterly winds from Java to the East African coasts once or twice within the last hundred years. But the thorough and repeated colonization of Madagascar by a Malayo-Polynesian race was scarcely a matter of mere accident, and argues a certain design, though a bold one, at the period of its inception. Another enigma in the history of East Africa is: If the Malay-Polynesians could colonize Madagascar deliberately or even accidentally, why did they not reach East Africa in similar numbers and leave unmistakable marks of their former presence there in the native races, the languages, manners, and customs? There is no greater puzzle in the history of human migrations.

(2) The Nilotic Negroes early came under the influence of that primitive or modified form of white man, the Hamite. This influence is to be seen in not only the physique of some of the Nilotic types, but in several of their language-groups in which there exist numerals obviously borrowed from Gala or Somali, and in which there are other word-roots of apparently ancient incorporation. Whether the discrimination of sex, masculine and feminine, is directly derived from the impact and influence of the Hamite, is open to question. Most, if not all, of the Nilotic tongues, and the mysterious and isolated Bongo of the Bahr-al-Ghazal, distinguish in their pronoun-particles between masculine and feminine, "he" and "she." But this may be only a further development of a principle already at work in the Bantu tongues, in which there has been a tendency from remote times towards the institution of a feminine particle or prefix (without a concord) derived from a word meaning "mother" (*na, nya*), or to identify the diminutive prefix *ka* (which possesses a concord) with a feminine sense, and the root-word for "woman," *-ka*. At the same time a male prefix, *se, sa, or so*, exists in some of the Bantu tongues and is related to a root-word for "father." It is, at any rate, noteworthy that the feminine particle or prefix in the Nilotic tongues, which is usually *na* and which consequently offers some resemblance to the Bantu "mother" prefix, is unlike anything associated with the feminine gender in the Hamitic or Semitic groups, wherein the feminine letter or particle (prefix and suffix) is *t* or *ti* in its pristine form.

But about the 17th century of the Christian era (as nearly as we can calculate by deductions from native traditions and from the prevalence of Bantu place-names) some distance to the north of the present Bantu frontier there began a decided movement southwards up the valley of the Mountain Nile on the part of the Nilotic Negroes, such as are represented at the present day by the Shiluk, Bari, and Lotuka. The Shiluk¹ type sent considerable colonies southwards, overrunning Sudanese

¹ This word is an Arabic corruption of a tribal name which was probably something like *Choli* originally, but it is a convenient term for the inclusion of a special group of the Nilotic peoples of which the existing Shiluk are representative.

tribes like the Madi (of West-central African affinities). Thus there were founded settlements of the Aluru group on the shores of the Albert Nyanza, and of the Acholi and Gang tribes between Karamojo and the Victoria Nile, and the much farther-afield colony of the Ja-luo in the Kavirondo country east of the Victoria Nyanza. In Kavirondo, Bukedi, and Bunyoro, and possibly even the southern part of the Madi country, the Nilotic tribes were certainly preceded by the Bantu, judging from the prevalence of a Bantu type of place-name, especially those with the prefix *pa-*. Earlier still, perhaps, the Nandi group of Nilotic peoples had migrated southwards from the west coast of Lake Rudolf (perhaps expelled by the Turkana) and had colonized the plateaus and mountains of Eastern Equatorial Africa from about 3° N. latitude to 6° S. latitude. They have imparted their present characteristics in language and customs to the hunting tribe of the Andorobo, which now ranges nearly to the equatorial coast of the Indian Ocean and far south into German East Africa. Such of the broken tribes of northern German East Africa near the Victoria Nyanza as are not a kind of bastard Hamitic (*Es-segeju*, etc.), or are unclassified like the Mbugu, Mbulungu, or Sandawi, belong to this Nandi group in language.

Simultaneously with these convulsions (we may guess), a third group of Nilotic Negroes, the Bari-Lotuka-Turkana, sent out its pastoral herdsmen and its cattle-loving giants. These in their southward march have left the Teso or Elgumi people near Mount Elgon, the Turkana and allied tribes on the west coast of Lake Rudolf, and most noticeably the Masai of British and German East Africa.

The Masai became noteworthy as migrants and raiders, and touched the fringe of recorded history no earlier than the first half of the 19th century. At that time, when Krapf and Rebmann and other German missionaries were penetrating from the coast towards the great Snow Mountains, they were made aware of the Masai or Oigob raiding peoples, who were pressing the Bantu in all directions, driving them towards the coast or up into the mountains. They noted that there were two types of Masai, though it might be added, there was practically no linguistic difference between the two. The earlier arrivals were known by the Swahili name of Kuavi or Kuafi, and apparently described themselves as Oigob. They were agricultural as well as cattle-loving, and became much more placable than the prouder Masai, who pressed on them from the west and virtually destroyed them in course of time. Before European influence interposed a check, the Masai in their southward raids had reached as far as 7° S. latitude.

(3) In the south-west of Africa far-reaching convulsions were caused by a relatively small band of invading Hottentots. The Dutch settlers in Cape Colony had imparted some knowledge of Christianity and elements of material civilization to their Hottentot serfs and servants, whom they did not always treat very well. One family of three brothers, which had assumed the Dutch nickname of *Afrikaner*, revolted against the cruel treatment of their master or employer, shot him, and escaped north of the Orange River with all the plunder and arms on which they could lay hands. These *Afrikaners* were daring men of reckless courage,

strong swimmers, ferocious fighters, and ruthless slayers of big game. North of the Orange River they soon collected a band of adherents, mostly Hottentots and Bushmen, but also a few nondescript Negroes, escaped Bantu slaves from Cape Colony. Their numbers increased by birth and immigration; and at last in the sixties of the 19th century they had become the dominant power in what is now German South-west Africa, and carried on a bloody warfare with the Bantu-speaking Ova-Herero.

The Hottentot race is possibly composed of an ancient Negro—? proto-Bantu—or even semi-Caucasian (Hamitic) invading element in South-western Africa, mixed with the blood of the indigenous Bushman population. The Bushman element now greatly predominates in the Hottentot physique. When South Africa was first discovered by the Portuguese and the Dutch, there seem to have been two very distinct types of Hottentot, one much more civilized than the other. The more savage Hottentots were simply larger and stronger Bushmen, using weapons superior to those of the Bushman, but not possessing domestic cattle or sheep. The other tribes found in the more central part of southernmost Africa—eastern Cape Colony—were much more pleasing in appearance, and not only possessed domestic cattle of an ancient Egyptian breed, but had already trained them as riding animals. Hottentots of this type, especially amongst the women, are described by the European pioneers as being good-looking or handsome, the women especially so. Not only in language¹ but in culture and in bodily characteristics, there would seem to have been some slight element of the Hamitic Caucasian in the Hottentot, and this, considerably reinforced by the constant intermarriages between Dutch settlers and Hottentot women, made of the Hottentots in the 19th century a conquering race wherever they came into contact with pure-blood Negroes or Bushmen.

It was, of course, mainly the possession of firearms and the knowledge how to use them that gave to the Namakwa Hottentots, under the leadership of that remarkable Afrikaner clan, the position of a conquering race throughout South-west Africa during the second half of the 19th century. The Afrikaner clan and its adherents penetrated northwards during the last hundred years till they actually menaced the Portuguese settlements in Southern Angola. But for the intervention of the Germans they would probably have exterminated or enslaved the tall Bantu Herero and Ovambo.

On the other hand, in the more central parts of South Africa, the bastard Hottentots or "Grikwa," working in closer sympathy—almost alliance—with the missionaries and the British authorities, opened up the way to Bechuanaland and the Western Transvaal. In 1884 Germany intervened in the affairs of South-west Africa (because of the maltreatment of German missionaries by the Namakwa

¹ The existence of the click language—Sandawi—south-east of the Victoria Nyanza—which has slight root affinities with Hottentot, yet is spoken by a degraded Hamitic race, is an instance of how the Hottentots of South-west Africa may have arisen. The Hamitic affinities of the Hottentot dialects are confined to sex distinction and sex-indicating particles, a somewhat parallel instance to Hausa. There is apparently no sex discrimination in Sandawi.

Hottentots). Subsequently, between 1890 and 1906 it cost the Germans several millions sterling and the lives of several thousand German soldiers, before these thirty or forty thousand Hottentots and Hottentotized Negroes could be subdued, mainly by extermination.

(4) The Zulu conquests of South-east Africa began about the same period, the opening years of the 19th century. Dingiswayo, a Zulu refugee returning after years of exile in Portuguese East Africa, secured the chieftainship of a small clan in Zululand proper, and laid the foundations of the Zulu monarchy.¹ He was succeeded by Chaka, who became a mighty conqueror, but whose conquests were largely futile owing to his wild-beast love of slaughter. But he was the indirect means of sending two of his great captains on subsidiary careers of conquest—Mosilikatse on the north-west, and Sochangane on the north-east. In addition to this, other Zulu bands, known generally as the Bangoni, wandered northwards on their own account, raiding and ravaging, until at last from sheer weariness of travel they settled down as overlords amongst submissive populations. Mosilikatse carried the Zulu language and the Zulu blood across the Transvaal to what is now known as Matebeleland and the western Karafina or Mashona country. His rule, however, and his tribal influence stopped short at the Zambezi.

His efforts were countered in that direction by the equally warlike Makololo, the Basuto followers of Sebituane. The general upset caused by these Zulu convulsions in South-east Africa had sent streaming northwards hundreds of thousands of Bechuana,² first as refugees and then, as they grew bold, as raiders and conquerors. A hundred years ago or more one band of these—the Ba-hurutse or Bafurutse—had turned northwards and partly settled the Ngami Lake region and partly the banks of the Upper Zambezi, where they left behind them the tribal name "Barotse." But Sebituane's followers, the Makololo, belonged rather more to the Basuto or southernmost Bechuana stock. They had conquered nearly all Upper Zambezia by the middle of the 19th century, and although the indigenous tribes and dynasties returned to power after 1864, the ugly Makololo dialect of Sechuana remains (unfortunately) the official language of Northern Zambezia at the present day, where it does not give way to the still uglier "Kitchen Kafir."

The descendants and slaves of Mosilikatse's Zulus have settled down as the

¹ Zulu power arose from one of the easternmost of the many Kafir clans of South Africa—a tall, good-looking Bantu people, with a suspicion of a Caucasian strain in their blood, derived, it may be, from those unknown Caucasian builders of Zimbabwe, or even from that remote Egyptian strain which is so prominent to the eye in the more aristocratic Bantu tribes of Central and Eastern Africa. The Zulus were armed for these far-reaching conquests by the ideas of discipline and organization which they obtained from the example of the white man in the late 18th and early 19th centuries.

² The Bechuana, anciently allied to the Zulu-Kafir group, had reached Central Zambezia about the 14th to 15th centuries. Some connect them in origin with the Ba-zimba cannibals of South Congoland. They forced their way in the 16th to 17th centuries through the Karafina people of Monomotapa and reached the Transvaal, which they colonized, after expelling or absorbing the Bushmen.

"Matebele," a name given to them by the Bechuana. The followers of Sochangane mostly became known as the Aba-gaza, and founded, so to speak, the Zulu State of Gazaland in South-east Africa. They were first made famous by their ravages on the Portuguese Zambezi settlements in the early 19th century. In this direction they were called the "Landins," no doubt a corruption of the Zulu proper name, Umlandine. But the Landins may also have belonged to the bands ordinarily termed Abangoni. The Abangoni under various leaders crossed the Zambezi in the twenties and thirties of the 19th century and founded powerful kingdoms in West and South-west Nyasaland. Others of them passed to the east side of the lake or round its northern extremity, and became the dreaded Ma-gwangara of German East Africa, also known as the Maviti, Mazitu, Machonde, or Manindi. Bands of these Abangoni founded powerful kingdoms in South-west and West Nyasaland and in the far north became known as the Batuta, and reached to the east coast of Tanganyika and even to within sight of the waters of the Victoria Nyanza, before their efforts died out and they became merged in the resident population. These facts have to be borne in mind by the ethnologist and philologist; otherwise, finding Zulu clicks and Zulu word-roots, head-dresses, shields, and customs on the verge of Equatorial Africa, he may arrive at wrong conclusions regarding the development of Bantu speech and history generally, unless he realizes that the presence of the Zulu speech and phonology and Zulu customs and names in Eastern Africa and Nyasaland can be explained by the tribal convulsions which occurred in South Africa a hundred years ago and led to those extraordinary Zulu raids which reached from the 30th northward to the 3rd degree of south latitude.

(5) Traders and missionaries who had begun to settle on the Gaboon coast in the first half of the 19th century, recorded the turmoil and loss of life which was taking place due to the invasion of these equatorial coastlands in the basin of the Ogowe by a much dreaded race of cannibal Negroes of splendid physique. These were the Ba-fang (as they sometimes call themselves generically), the Pahouin of the French and Fan of the earlier British explorers. The Fang were lighter in skin colour and better looking in facial features than the Negroes of the Gaboon-Cameroons coastline. They used cross-bows and were clever iron-smiths. The men went nude before they came under coast influence. We now know that the Fang migration was due west from the Western Mubangi and Sanga rivers; also from the Upper Sanga, down the Nyong river to South Cameroons. They are to be divided at the present day into three different groups: the Bulu (farthest east), the Yaunde (north), and the Osieba or Fang (south). The Fang would appear to have migrated from the Baya country, north-west of the Mubangi country, some five or more centuries ago. Here they were impressed with the southernmost influence of the Sudan, and tinctured with a superior strain of northern blood. They issued from this region speaking a semi-Bantu tongue, but then for some centuries dwelt in close contact with West Congo Bantu, from whom they borrowed numerals, many word-roots, and some prefixes.

Finally, there is that question of vast importance, the modern European colonization of Africa. Africa, we have seen—so far as indications of archæology and language go—has been anciently and continuously permeated by the white man, who in some shape or form or attenuated intermixture has provoked all race movements of great importance.

The definite and the modern European colonization of the Dark Continent began with the establishment of the Roman Empire. After a long break, it was followed by the maritime wars and slave trade of the Saracens and Moors, which imported hundreds of thousands of Greek, Slav, Italian, French, and even British captives into Northern Africa. In the 19th century there followed the commercial Greek and Italian colonization of Lower Egypt, and the Maltese, French, Italian and Spanish colonization of North Africa. The Dutch had begun to colonize South Africa at the close of the 17th century. The Portuguese colonized Angola to a limited extent at the same time, and especially during the 18th and 19th centuries, producing, however, not as the Dutch had done, a solidly established, pure white people on African soil, but a race of half-castes; who, however, have had a most potent influence on the civilization and the commercial development of West-central Africa.

The Dutch were followed in South Africa by the British and the Germans. The French have partially colonized Madagascar, as well as their old plantation colonies of Mauritius and Réunion. The Italians will shortly make a new Italy in the Tripolitaine. Spain undoubtedly will colonize a good deal of Northern Morocco. The British are founding white men's colonies in Nyasaland, Rhodesia, and Equatorial East Africa. Once again, Africa is about to receive a most powerful infusion of Caucasian blood.

SUMMARIZED CONCLUSIONS AND SPECULATIONS OF THE AUTHOR.

The broad central part of Africa from Senegambia to Somaliland, north of the Mubangi-Wele River, has evidently been densely and continuously populated by Negro and Negroid races for a hundred thousand years or so. The reasons for arriving at this conclusion are the evident ancient destruction of forests and diminution of game by human agency over all but the very humid districts, the apparent ancientness of the stone implements, the extraordinary number and diversity of the speech families and distinct languages, and the isolated character of many of these. Such linguistic developments and singularities would suggest a considerable space of time, an abundant and persistent population.

Further, the more primitive Negro peoples of forested (*i.e.*, West and West-central) Africa offer a remarkable degree of affinity in the phonology of their speech, in their customs, weapons, utensils, and body-adornments with the Melanesians and Oceanic Negroes of New Guinea, the Bismarck Archipelago, and Solomon Islands, and even Fiji. These affinities and peculiarities, however, are not shared with the Bushman of South Africa in the same degree.

South Africa was seemingly the home of man of a generalized (perhaps Negroid) type at a period which may be computed at some 10,000 to 50,000 years distant from the present day;¹ though as yet the approximate remoteness of the earliest human remains and artefacts cannot be guessed with any precision. Apparently the Bushman type was not the earliest human race in South Africa, but was preceded by a race with fairly large brain capacity and slightly Caucasian affinities. As yet there are no definite discoveries of undeniably ancient pure Negro inhabitants in the regions to the south of the Zambezi.

The Bushmen are aberrant, specialized, and, perhaps, degenerate Negroids, displaying scarcely any affinity with the true Negro beyond the spiral, tightly curled hair. Amongst themselves they share certain peculiarities of physical conformation but vary in regard to the shape of the head, the degree of prognathism, development of brow-ridges, and stature. Though they all agree in general features of phonology—the excessive use of clicks, of nasal and guttural sounds, and tenuity or paucity of vowels—yet judged by the degree of affinities in word-roots their languages differ so widely from one another that a considerable period of time is required to account for their divergence from a common stock. On the other hand, the resemblance between the three or four Hottentot dialects is close and shows that no very long period can have elapsed since the ancestors of the existing Hottentots formed one people living within a restricted area. Though a Bushman-like race extends northwards between the Kunene and Upper Zambezi rivers, so far no specimen of Bushman pictorial art has been found north of the Zambezi or in South-east Africa. Indications of the existence of a race using stone implements like those of the Strandloopers and Bushmen occur not only all over South Africa, but also through Northern Zambezia to the vicinity of Tanganyika and eastward to Moçambique. One or two historical references and a variety of native traditions lead to the conclusion that Bushmen-like, click-language people persisted in Nyasaland and the Moçambique province down to within a few hundred years ago. Other fainter indications—chiefly the occurrence of the Sandawi click-language and sporadic instances of Bushman physical peculiarities—suggest the former existence of a Bushman-like race over all East Africa. “Strandlooper” (South African cave-men) stone and bone implements and shell ornaments and pictorial designs can be matched in Algeria.

The arrival of the Hottentots as a band of conquering, cattle and sheep-keeping people in South-west Africa did not much precede that of the Bantu in time. The cultural and linguistic affinities of the Hottentots suggest their being

¹ Very few data exist by which the age of the Cave men of South Africa and their artefacts can be determined. These remains, however (and others in Northern Rhodesia), are associated with the bones of mammals long since extinct, though how long we do not know; for instance, with the gigantic buffalo (*Bos bainesi*), a large horse (*Equus maximus*, an exaggerated development of the zebra), a vanished type of rhinoceros, and even—in the Transvaal—with a mastodon. But such mammalian types may have persisted to a very late date in Southern Africa. Similar archaic mammals have survived all climatic changes and the attacks of savage man, only to be extinguished in a few years by British sportsmen in the 19th century.

influenced by some Hamitic invasion of Eastern Equatorial Africa, say 2,000 to 3,000 years ago.

The Congo-Angola coastlands, especially north of the Kwanza River, and the coastlands of Zanzibar, down to the Ruvuma River, and the east coast of Lake Nyasa and actual valley of the Zambezi, contain some evidence of comparatively ancient human habitation. But the heart of Central Africa—mainly the central basin of the Congo—as yet produces no sign of ancient human penetration and settlement. So far no stone implements have been obtained between the Mubangi River on the north and the table-lands and hill country which fringe the Congo basin on the south and west, though they are common in the cataract region of the Western Congo.

But the south-eastern fringe of the Congo Basin, and especially the West Tanganyika and Katanga regions, are rich in stone implements and evidences of comparatively ancient metal workings (copper and iron). The reported vast subterranean dwellings and caves in Katanga call urgently for scientific investigation. Some of the existing cave-dwellers are said to be Bushman-like in appearance. This region yields "Strandlooper" implements.

The Bantu occupation of Trans-Zambezi South Africa does not go back traditionally more than about 1,200 to 1,300 years. The only immediate predecessors of the Bantu in South-central and South Africa seem to have been the Congo Pygmies in the Congo basin and Bushmen and Hottentots south of the Zambezi. There are no traces remaining of pre-Bantu people in East Africa (other than Bushmen) south of the 8th parallel of S. latitude; though the Zimbabwe ruins and a certain non-Bantu, non-Bushman element in the tongues of the south-east coast belt (Zambezi Delta to Sabi River) suggest the previous existence in that region of peoples who were neither Bushman nor Bantu in language, and far superior to either in culture. The ancient pottery dug up from a depth of 10 feet or so in East Nyasaland is somewhat superior in make to the pottery made there at the present day.

In East Africa—but not markedly so, south of the 4th degree of S. latitude—there is some linguistic, cultural, and physical evidence to show that this region was anciently inhabited by Bushmen, Pygmy, Forest, and Sudanese Negroes. But there is no trace of an aboriginal Negro people in Somaliland proper. Much of Abyssinia, Galaland, Egypt and North Africa (besides the Sahara Desert and the Northern Sudan) had an ancient Negro population.

All North Africa and much of the Sahara to the northern limits of the Sudan abounds with ancient rock engravings recalling in style and fidelity of reproduction of animal life the drawings of the cave-men of Western Europe rather more than the style of the Strandlooper and Bushman. Such indications as there are in these records of the rocks of the human figure suggest a man of generalized Caucasian type rather than a Negro. Stone worship and the use of stone in building and sepulture extend from North Africa southwards across the desert region to Senegambia (sporadically) and the northern parts of the Sudan, and to Somaliland.

The superstitious use of stone in connection with religion, burial, and after-death memorial reappears again in Yoruba, in the North-west Cameroons and adjoining Calabar region (Ekoi-land). Elsewhere there is scarcely a trace of the structural use of stone (except the piling-up of cairns of small stones as a superstition) over all Negroland until one reaches the region between the Zambezi, the Limpopo, and the Sabi—the Zimbabwe country.

In the heart of forested Negro Africa, from French Guinea to South-central Congoland, wood everywhere takes the place of stone as material for utensils, as object of worship and as memorials of the dead. The area of wood use and wood worship, moreover, was of much wider extension formerly and covered nearly all East Africa.

The Bantu languages were called into existence by the immigration into the Central Sudan of some Fula-like race of semi-Caucasians, speaking "class and concord" language. In word-roots the Bantu tongues have their nearest affinities with the "semi-Bantu" languages of the Benue, Lower Niger, and Calabar-Cameroons. In syntax they have also slight affinities with the Kordofan and the Nilotic groups. I think we may further surmise that after they were created by the impact of some language influence like that of the Fula type, they were additionally—at a later date—reacted upon by slight Hamitic influence on the part of some such people as the Gala. This impact probably took place after the ancestors of the Bantu had occupied the central region of the Great Nile Lakes, and after they had sent out their first hordes of invaders into the Northern Congo forest-belt, towards the Atlantic (Cameroons) coast. I believe this Bantu conquest and occupation of the southern third of Africa to have been an event of comparatively recent times, beginning, perhaps, not more than 2,000 years ago. Parts of the Congo basin were perhaps only occupied 400, 600, and 900 years ago. Some of the pre-existing Sudanese Negroes, whose ancestors were overwhelmed and "Bantuized," still remain with their non-Bantu languages along the course of the Northern Congo. Elsewhere, however, in Northernmost and in Central Congoland, there have been subsequent Sudanese invasions which have overridden and forced back the Bantu. The Bantu-speaking Negroes, with their cattle-keeping aristocracies (anciently of Gala origin), have from their earliest days and traditions been associated with the use of metals, first copper and then iron. No doubt it was this knowledge and these superior weapons which enabled them to displace and assimilate so rapidly the pre-existing Negro tribes, still in the Stone age or only using weapons and utensils of wood, horn, or bone.

The Malay colonization of Madagascar was an episode which extended perhaps over a period of about 1,200 years, beginning about 3,000 years ago and terminating with the arrival of the Hovas about 1,800 years ago. There are vague traditions among the Malagasies that they found this great island sparsely populated by some pre-existing Negro race which buried its dead in graves surmounted with stones. Later on, the Himyaritic Arabs, trading to Madagascar about the beginning of the Christian era, transported thither many Negro slaves from the opposite Moçambique and Zanzibar coasts. These Negroes presumably had then)

no more than now, no suitable vessels for sea-faring, therefore they could only have come to the island on board the Arab *daws* and *mitepe*. But by some means or other they came in sufficient numbers to colour the skin of the Malay invaders, crisp their hair and influence their speech with numerous Bantu roots.

Lastly, in deciphering the faintly recorded human history of Africa, one seems to see in the White Man, the Caucasian, the *primum mobile*, the chief causer and inspirer of racial migrations, disturbances, remoulding of peoples, uprising of religious beliefs, creation of new languages, new arts, especially of agriculture and the domestication of animals. The White Man has been the cause of all good progress as well as of all the annectant misery and strife which hang on the flanks of upward evolution. And so potent has been the Caucasian in the history of Africa, as of Asia and Oceania—perhaps even of prehistoric North America—that it has needed but the slightest admixture of his blood with that of the Negro to effect these far-reaching results.

When and since my paper was read before the Royal Anthropological Institute in June, the following criticisms have been received; together with others—verbal and epistolary—which I have attended to in my revised text. But I append the remarks of Mr. Emil Torday, Mr. T. Athol Joyce and Professor C. G. Seligmann as they stand:—

The intimate personal acquaintance Sir Harry Johnston has with the various inhabitants of Africa (including the white men inhabiting the north, among whom he began his brilliant career) makes him a much fitter person to judge their respective merits than most of us who only know one race or the other and consequently are prejudiced in its favour. I admit my partiality for the black man and consequently have to distrust my own judgment when I feel convinced by certain arguments that seem to prove to my satisfaction that we are indebted to the Negro for the very keystone of our modern civilization and that we owe him the discovery of iron.

That iron could be discovered by accident in Africa seems beyond doubt: if this is so in other parts of the world, I am not competent to say. I will only remind you that Schweinfurt and Petherick record the fact that in the northern part of East Africa smelting furnaces are worked without artificial air current and, on the other hand, Stuhlmann and Kollmann found near Victoria Nyanza that the natives simply mixed powdered ore with charcoal and by introduction of air currents obtained the metal. These simple processes make it possible that iron should have been discovered in East or Central Africa. No bronze implements have ever been found in black Africa; had the Africans received iron from the Egyptians, bronze would have preceded this metal and all traces of it would not have disappeared. Black Africa was for a long time an exporter of iron and even in the 12th century exports to India and Java are recorded by Idrisi.

It is difficult to imagine that Egypt should have obtained iron from Europe

where the oldest find (in Hallstadt) cannot be of an earlier period than 800 B.C.,¹ or from Asia, where iron is not known before 1000 B.C., and where, in the times of Ashur Nazir Pal it was still used concurrently with bronze, while iron beads have been only recently discovered by Messrs. G. A. Wainwright and Bushe Fox in a predynastic grave and where a piece of this metal, possibly a tool, was found in the masonry of the great pyramid.

We, must, however, not forget that no archaeological work whatever has been carried out in the greatest part of Africa, and future discoveries may disprove all that is said above. The country west from Lake Mweru and of the Lukalaba (Lualaba) with its great number of undisturbed caves ought to attract the archaeologist who wants to contribute to this most fascinating research in the ancient history of Africa.

E. TORDAY.

It is a matter of great regret to me that I am unable to be present at the reading of Sir Harry Johnston's paper this afternoon; but through the kindness of the author and the Secretary of the Institute I have had the opportunity of seeing an advance proof. I wish I could have expressed personally my congratulations to the author for the clear-sighted manner in which he has reduced a most bewildering mass of evidence to order; the material which must have passed under his hands is very vast, and its nature makes the continent of Africa perhaps the most difficult of all to view as an organized whole as far as the tribal movements are concerned. The paper represents, I know well, years of labour, and contains only the results. On the importance of those results it is unnecessary to dwell; but the ethnologist is always asking for more, and I should like to express the hope that Sir Harry will at some time give us the chief points of evidence concerning his most important conclusions as well. This could not, of course, be done within the limits of a paper; I am hoping for a book, and I trust that Sir Harry will perform yet another service to ethnology in producing it.

Among the various kinds of evidence which the author has considered, I believe that linguistic evidence has taken the principal place. Unfortunately my studies have been limited to the culture and traditions of the various tribes, and it is a great satisfaction to me personally to find that the conclusions which I have been led to form correspond in the main to those which Sir Harry has based on a more extensive knowledge. Nearly all my remarks consist in that request for more which, as I said above, is always on the lips of the insatiable race of ethnologists.

First as to the Fula. I cannot quite gather from the paper the exact ethnological position which the author would give them. In one place he seems to regard them as present in Africa before the immigration of the Berbers, and as distinct from the "Libyan" section of peoples of which these Berbers are the nucleus. If so, whence did they come? [Presumably from western North Africa,

¹ German authorities would make this 2000 B.C., or even earlier.—H. H. J.

like the Berbers, whom they preceded. They may be the more or less negrified remains of the Neolithic hunters and herdsmen of Mauretania.—H. H. J.] They are first heard of in Senegal, and all their movements of which we have evidence have been from west to east. Their geographical position and their physical appearance make them a very convenient link between the Berber, Tuareg and Tibbu on the one hand, and the Mandingo and Negro on the other; and I have hitherto regarded them as an intermediate tribe. It is true that the Berbers are in the main agriculturists, the Fula cattle-keepers, but here the Tuareg and Tibbu furnish the link, since these tribes have been forced to abandon agriculture owing to their desert environment.

I gather that the author is inclined to regard the Libyans as, in the main, of Iberian stock, and therefore distinct from the Hamite. This point of view is supported by the cultural evidence. Wherever the Hamite is found, pure or diluted with Negroid admixture, the keeping of cattle always assumes paramount importance, while the Berber, except where he has had a pastoral life forced upon him by his environment, is principally an agriculturist. I am inclined to regard the Hamitic element in the Libyan peoples as entirely negligible unless some evidence other than linguistic can be found. We know that linguistic evidence is at times unstable, as in the case of the Barotse country, where the Sesuto speech survives, though the Makololo who introduced it were wiped out to a man in historical times.

When the author states with emphasis that the Zimbabwe ruins are not Negro, I am quite prepared to agree with him if he uses the term in the narrow sense. But if he means to exclude the Bantu also, then I find myself, to my regret, on the other side. We are beginning to find that the Bantu is not so primitive as at first thought; recent investigations have brought to light a sociology and system of government considerably more complicated than at first suspected, especially as far as the greater kingdoms, Bushongo, Lunda, Benin, etc., are concerned. The architecture of the ruins is on a very low plane, and we know that the economical activity of the Negroid, as far as work implying communal labour is concerned, depends solely on the personality of the chief; and Africa has produced many chiefs of great force of character. No remains other than fragments of porcelain of comparatively recent date, implying external connection have been found in connection with the ruins. The ruins themselves do not resemble any buildings elsewhere, and in any case the onus of proof must lie with those who wish to invoke some external influence. If Sir Harry has evidence of such I should like to urge him to publish it.

As to Egyptian influence; I am inclined to think that the author is inclined to overrate its extent. That the tribes in the immediate radius of the Nile valley were affected by its culture it would be hard to disbelieve; but I would urge that there is no evidence for supposing that this influence reached West Africa. The presence of beads of Mediterranean type is no evidence. Beads are the most exasperating objects with which the museum man has to deal. They are universally

welcome, and they pass readily from hand to hand. Nor are they alone in their propensity for travel; I need only mention Katanga copper, which in early days travelled far to the north and north-west, and formed a regular article of import among tribes who were never near the Katanga. Also we know that maize and tobacco in the interior of Africa anticipated by centuries the arrival of the white man who introduced it on the coast. Nor can I admit that the art of the Bushongo or Bini bears any striking resemblance to that of Egypt. In fact I have for a long time held the other view, viz., that many points of Egyptian culture, and especially of religion, are based on practices and beliefs which are Negro in origin.

With regard to the specialized culture of the Bushongo, I think it is clear that they brought little of it with them. Tradition is quite categorical at least on the subject of weaving. It is expressly stated that they wore barkcloth until a very recent date, and this material survived until contemporary times as the garb of ceremony. We even know the name of the king in whose reign weaving was adopted from the tribes to the west of their present home.

There are two movements of peoples on the importance of which to Africa I should like to lay stress. The first of these is that which caused the Bushongo migration, and which, I believe, gave rise also to the easterly movement of the Azande and the westerly movement of the Fang. These three tribes appear to be connected by many points of similarity, especially the use of the throwing-knife (Shongo means undoubtedly throwing-knife). Moreover their traditional routes of migration seem to coincide in the region of the Shari where this weapon is still in use. It is possible that the Fang migration may be later than that of the Azande and Bushongo, between whom the cultural connection is particularly close.

The second movement is that attendant upon the formation of the Lunda Empire, which had such far-reaching effects upon Angola and the Kwango, Kwilu and Loange districts. I have recently worked out the complicated tribal movements to which it gave rise, from a number of sources including certain information brought back by Mr. Torday. This account now awaits publication in Belgium, and will be found to confirm Sir Harry Johnston. Also I have information concerning the westerly spread of tribes from Tanganyika, relating mainly to the great Batetela people, and based almost entirely on Mr. Torday's material. This though worked out two years ago, is still in the Belgian printer's hands.

I wish that I had had the time to give a longer study to a communication of this importance; the foregoing remarks embody my first impressions. In concluding I should like to offer the author my thanks, as a student of African ethnology, for his courage in attacking so complicated a subject, and in presenting a concrete scheme which must be a valuable guide for future research. I hope that he will not stop here, but will eventually give us in book form a fuller and more detailed treatment of the question, in which he will discuss at length the various points of evidence upon which his conclusions are based.

T. ATHOL JOYCE.

In answer to the foregoing criticisms I add the following remarks on (a) the originating or the introduction of iron working in Negro Africa, and (b) the "ethnological" character of the Zimbabwe buildings and culture.

With regard to iron, I would refer readers to the article by W. Belck on "The Discoveries of the Art of Iron Manufacture," in the Berlin *Zeitschrift für Ethnologie*, 1910 (there is an English translation published in the 1911 Annual Report of the the Smithsonian Institute), and to the article on "Hallstadt" in the *Encyclopædia Britannica* and other writings of Professor W. Ridgeway, based on much German and Austrian research work; also to my book, *George Grenfell and the Congo*. It seems to be increasingly evident that the art of iron manufacture originated first in Europe or West Asia, and that, like the domestication of the horse, it was one of the important discoveries of the Aryans which made them in so many directions a conquering people, and from them passed to Semite and Mongol. It is quite possible that Negroes or Negroids in the Northern Sudan were manufacturing iron implements before iron became a much used metal in Egypt; but these Sudanese, Nubians, or Nilotes may have learnt the art from Caucasian emissaries of trade and knowledge who were Minoan or Phœnician adventurers. This much is clear from an examination of African archaeology, legends, folk-lore, and languages: that copper was used before iron, and immediately replaced stone, horn, bone, and wood, and that the use of iron and the knowledge of iron working does not go back very anciently, except in Nubia. In the Congo basin, the introduction of iron instead of copper had apparently much to do with the great Bantu conquests and formations of kingdoms between an approximate 600 A.C. and 1400 A.C. "The hunter with the iron spear" is in many cases the legendary founder of this and that Central African dynasty, I myself require very convincing proof that the pure-blood Negro ever originated anything.

This is one reason why I find it distasteful to attribute to a Negro Bantu people, or any other more or less pure Negro race, the Zimbabwe architecture and culture. No doubt the Makarafia subsequently copied the art of stone-building and of gold-mining learnt from the Caucasian or semi-Caucasian immigrants into South-east Africa. But I am convinced they did not originate the gold-mining industry or build the old and original Zimbabwe. The remarkable Bantu languages may have been evolved in the Central Sudan from some diluted impetus of white man's intelligence, but the purest "Bantu" and the least Negro in physiognomy are the tribes of the Victoria Nyanza and Tanganyika; and although they stand high in brain capacity and religious and even social developments, in the structural arts they—like the Herero and Zulu—have remained low and have never conceived of the use of stone, nor have they taken any interest in gold. The Arab historians quoted by Capt. M. Guillain¹ specially

¹ Chiefly Idrisi, who wrote at the court of King Robert II of Sicily in the 12th century. The passages I refer to more especially are on pp. 224-226 of Guillain's *Documents sur l'Histoire (etc.), de l'Afrique Orientale*.

mention that although the Sofala countries abounded in iron and gold, the native Negroes preferred copper to other metals, and made all their ornaments of it. It is a remarkable fact that up till now no indigenous Bantu word has been found for "gold"—the natives of Central, East, or South Africa employ for the concept, "gold," corruptions of the English, Portuguese, or Arab word. In Zambezia the word for gold is (ordinarily) *ndalama*, which is simply a corruption of the Arab *dirham* = money. The conical towers of the Zimbabwe architecture recall irresistibly the early Islamitic minarets on the east coast of Africa, which in their turn may have been developed from antecedent Phœnician (or South-west Arabian) pre-Islamic architectural influence on the east coast of Africa. I still think the balance of probability lies in favour of an Arab-built Zimbabwe of from 2,300 to 2,000 years ago.

H. H. JOHNSTON.

The paper we have just heard covers so vast a territory and takes account of so long a period of time that any attempt at criticism or discussion must necessarily resolve itself into the consideration of a few sentences which, divorced from their context, may very well appear to bear a different significance to that intended by their author. Bearing this in mind, I am nevertheless tempted to cavil at Sir Harry's suggestion (if I understand him aright) that the Forest Negro arose directly from the Pygmy type, and I should absolutely dissent from the proposition that the Forest Negro specialized in the swamps of Nileland and became the Nilotic Negro. It is clear to my mind that the peculiarities of the Nilote are not due to specialization *in situ* of a primitive or comparatively primitive Negro race, but must be attributed to the influence of a foreign element, this element being identical with that non-Negro strain which also occurs in the Masai and kindred East African tribes. In other words the Nilote owes his comelier features and better developed brain to invading Hamitic influence, an influence which is perhaps to be found in its purest form in the foreign (Gala) aristocracy of Bunyoro and Ankole. A good deal of interest attaches to the tall stature of this group, of the allied Bahima and of the tribes of the Masai group in East Africa; indeed the Bahima are probably the tallest men in the world, yet all seem to have sprung from the fusion of the short, slim Hamite and the moderately-grown, stoutly-built Forest Negro. As far as I have been able to ascertain the numerous breeding experiments on Mendelian lines that have been carried on in recent years afforded no analogous instances, indeed nothing seems to be known of the conditions producing variation of size in animals; there may be, however, an interesting parallel to the stature of the Nilotes and related tribes in the result of the union of the dwarf procumbent pea (commonly called the cupid pea) and the bushy pea, the latter being a plant of stiff upright habit of short to medium height: the first generation of hybrids are all giants.

Again, the view put forward concerning the Bantu Negro (pp. 390, 391 *et seq.*) quite ignores the comparatively large foreign, and as I should say Hamitic, element in such

tribes as the Zulu Kafirs. This is perfectly logical from the author's standpoint; if there is no Hamite in the Nilotes then there need be none in the Zulu, yet a considerable foreign non-Negro element is generally admitted in the Southern Bantu.

In the last few months important evidence has come from the linguistic side in favour of the Hamitic element in the Nilotes. This will be found in Westermann's recent work *The Shilluk People*. This authority states that the Nilotic languages, whether they belong to his Niloto-Sudanic group (Dinka, Shilluk, etc.), or to his Niloto-Hamitic group (Bari, Masai, etc.), all show more or less strong Hamitic influences, and as further showing how widely spread is this Hamitic influence, I may quote his conclusion that even such languages as those of the Abukaya, Lendu and Moru are connected with the Niloto-Sudanic group.

I may now refer to the suggestion that the cattle-keeping aristocracies of Central Africa, e.g., the Bahima, are descended from Egyptian colonists of two or three thousand years ago. Surely a simpler explanation is that these represent the immigrant Hamitic element in a comparatively pure form. Here is a simple explanation of Sir Harry's observation: "Others again of this type [resembling Egyptians] were so strikingly like Galas and Somali that the Somalis of my party declared them to be of their own race." I feel sure that Sir Harry would not suggest an Egyptian origin for the Somali, though like the proto-Egyptians they are pure or almost pure Hamitic. [I have sometimes fancied, in studying the facial features of the Hima aristocracies in Central Africa, that I could distinguish two non-Negro strains: one akin to the Dynastic Egyptian, and the other to the Gala-Somali. Their long-horned cattle are akin to the breed of Ancient Egypt and modern northern Galaland; but this type of cattle (existing in the Chad region also) is not found in southern Galaland or in Somaliland.—H. H. J.]

To sum up; my impression of one aspect of the paper is that the author lays too much stress on Egypt as the great civilizing factor in Africa and ignores the far-spread Hamitic influence (of which the Egyptian civilization was only a special development) which was leavening dark Africa, perhaps for thousands of years before Egypt herself emerged into the light of history.

Before sitting down I should like to be allowed to add my tribute of admiration to that expressed by the President, and I may perhaps be allowed to suggest that the value of the paper, great as it already is, would be enhanced if Sir Harry could see his way to give brief footnotes giving his authorities. I very much doubt if any one in this room except Sir Harry could refer to the original account of Javanese junks which reached the African coast during the last century.

C. G. SELIGMANN.

The following are my comments on Professor Seligmann's remarks:—

It matters very little whether the Forest Negro arises from a Pygmy stock or whether the Pygmy is a specialized development of the Forest Negro. The two groups are evidently closely allied in bodily type. But I am inclined to regard

dwarfishness (*i.e.*, stature below a 5 ft. 3 in. standard for men) to be an acquired rather than a primitive character in mankind since the formation of the human genus. I think the long-leggedness and tallness of the Nilotic Negroes are physical traits due quite as much to conditions of environment as to racial intermixture. The Bahima are not, as Professor Seligmann suggests, "the tallest men in the world." This statement should be applied to the Turkana of Lake Rudolf; but gigantic stature occurs in most of the tribes of more or less Nilotic affinities. I cannot find anything in any statement of mine which underrates the importance of the Hamitic blood-element in the higher types of Zulu or of other great Bantu peoples, though this feature is capable of exaggeration at the hands of some writers. It is a great mistake to suppose that the whole mass of the Zulu-Kafirs are a race of tall handsome Negroids: it is only the aristocracies, so to speak, and a tribe or family here and there which answers to a Rider Haggard description. Many of the Pondoland and Natal Kafirs and the Swazis are pronouncedly Negro in build and physiognomy, while even among the Zulus of Zululand the Bushman element is patent to the eye of a trained observer. The linguistic influence of Hamite on Nilote is not denied by me but is, I think, correctly defined and limited.

As regards the cattle-keeping aristocracies of the Central Sudan and of Bantu Africa, I still prefer to assign much of the slight Caucasian element in their blood and almost all their culture to infiltration from Ancient Egypt rather than to influences from Galaland and Somaliland for reasons too numerous and wordy to be given here. Most of them have been already presented in my published works on Africa.

References to photographic illustrations of this essay appear here and there and are partly allusions to lantern slides used at the time of the lecture and partly to my original intention to illustrate this little treatise by a very large number of photographs and drawings of racial types, skulls (ancient and modern), domestic animals, architecture, and implements. But this collection proved to be far too numerous and expensive for reproduction by the Institute in its Journal. Therefore I decided to take the advice of Mr. Athol Joyce and reserve this material, together with maps, statistics, and bibliography, for production at some future date in a work on the Ethnography of Africa.

H. H. JOHNSTON.

FOLK STORIES OF THE TEMPASSUK AND TUARAN DISTRICTS, BRITISH NORTH BORNEO.

BY IVOR H. N. EVANS

(Late of the British North Borneo Company's Service).

INTRODUCTION.

THE present collection of Dusun, Bajau, and Illanun stories was made during the years 1910 and 1911, during which the writer was stationed in the two adjoining districts of the Tuaran and Tempassuk. The Tempassuk is inhabited by three different tribes, the Dusun, Bajau, and Illanun, and it is chiefly from the first of these that the tales have been collected; for since both the Illanun and Bajau are Mohammedans, their folk-lore is not nearly so extensive as that of their Dusun neighbours, who have only a hazy religious belief. The Bajau and Illanun, roughly speaking, form the coastal and estuarine population, while the Dusun, with the exception of those of a few large kampongs (villages) on the plains, which border on the Bajau zone, are confined to the foothills and mountainous portions of the district. [A map of the whole area is included which has been coloured roughly according to the tribal divisions.] The Tuaran District is also divided between Bajau and Dusun, but here Illanun are wanting. It would seem that the Dusun are the original inhabitants of the country and that the Bajau and Illanun, both proto-Malayan tribes, are later arrivals who have driven the first-named inland. This is known to be a fact in the case of the Illanun, who are a piratical people of Mindanaho in the Philippines; of whom small roving parties have settled in Borneo. The origin of the Bajau is, I believe, unknown, but they are widely spread along the coasts of North Borneo. However, as far as the Tempassuk is concerned, tradition asserts that they first came in trading prahus from the direction of Kudat, and eventually fought the Dusun and formed settlements in the country. It is often said by residents in North Borneo, seemingly without sufficient evidence, that the Dusun have a very large admixture of Chinese blood. What the Dusun would seem to be is a primitive Indonesian people, with possibly some slight strain of Mongolian (not modern Chinese) blood. The up-country Dusun is generally short, sturdy and light in colour, with a face that is often broad and flat, showing great development of the angle of the jaw. The nose is broad and the bridge and root depressed. The head is long as compared with that of the Bajau. The writer has made frequent inquiries as to legends of a small black race (Negritos) having inhabited the districts in former times, but has always been answered

by the natives that nothing of the sort has been heard of. Stone implements occur, but whether they were made by the ancestors of the present Dusun or not, it seems at present impossible to say. If any of the stories should appear to be somewhat vague to the reader, the writer hopes that he will ascribe it to the want of clearness of the Dusun narrator. The legends as well as the language of the district often vary from village to village, and consequently a legend well known to all the people of one village will often be totally unknown to those of another. Such legends as that of the Creation are, however, common to both the Tempassuk and Tuaran Districts, but are subject to local variations.

NOTE.—All the stories are taken down straight from the Malay, which is the lingua franca of the country.

LEGEND OF THE CREATION.

A version told by Gensiou, a Low-Country Dusun of Kampong Tempassuk, Tempassuk District.

When the world was first made there was only water with a great rock in it: a man and a woman were on the rock. The man and the woman were dirty and went down to bathe in the water, and when they bathed the dirt rolled off from their bodies. They smelled the dirt which came from them and the man said, "This will become land," and it became land. Then the man and woman made a stone in the shape of a man but the stone could not talk, so they made a wooden figure and when it was made it talked, though not long after it became worn out and rotten; afterwards they made a man of earth, and people are descended from this till the present day and from the other earthmen which they made at the same time. The man and the woman began to think in what way they could give food to their men, but they could not get anything, as there was no food in the world. Then the woman gave birth to a child, and the man said to the woman, "How are we to give food to our men?" The woman wanted to kill the child. So they killed it and when they had cut it to bits they planted it in the ground; after a time its blood gave rise to padi,¹ its head to a coconut, its fingers to pinang,² its ears to the sireh vine, its feet to jagong,³ its skin to a gourd vine and the rest of its body to other things good to eat. Its throat also became sugar cane and its knees kaladi (yams).

THE KANDOWEI AND THE KERBAU (BUFFALO).

Told by Anggor, a Tuaran Dusun.

NOTE.—The Kandowei is the white padi bird (*Bubulcus coromandus*) which so often accompanies herds of buffalo.

The bird said to the buffalo, "If I were to drink the water of a stream I could drink it all." "I also," said the Kerbau, "could finish it, for I am big while you

¹ Rice.

² Betel nut.

³ Indian corn.

are small." "Very well," said the bird, "to-morrow we will drink." In the morning, when the water was coming down in flood the bird told the buffalo to drink first. The Kerbau drank and drank but the water only came down the faster and at length he was forced to stop, so the Kerbau said to the bird, "You can take my place and try, for I cannot finish." Now the Kandowei waited till the flood had gone down, and when it had done so he put his beak into the water and pretended to drink. Then he waited till all the water had run away out of the stream and said to the Kerbau, "See, I have finished it!" And since the bird outwitted the Kerbau in this manner, the Kerbau has become his slave and the bird rides on his back.

KENHARINGAN AND BISAGIT.

Told by Anggor, a Tuaran Dusun.

Kenharingan made all men and the earth. First of all he made the earth, and the earth would not become hard. Then he ordered the Torepos¹ to fly to Bisagit, the Spirit of Small-pox, and ask for earth. The bird flew to Bisagit's country and when it came there it said to him, "Kenharingan has ordered me to come and ask for earth from here." Said Bisagit, "You can have earth from here if Kenharingan will promise to divide his men with me, half for me and half for Kenharingan." "Wait," said the bird, "and I will fly back to Kenharingan and ask for orders, for I have no power to make the agreement." So the Torepos flew back to the country of Kenharingan and, going up into his house, said to him, "I have been to Bisagit's country and asked Orang Tua Bisagit if he will give earth, but he said, 'I will only give earth if Kenharingan will share his men with me.'" "Very well," said Kenharingan, "I will share my men with him. Fly back and ask for earth and say to Bisagit that with regard to his wanting half my men I will agree to it if he will give me earth." The Torepos went back to Bisagit's country and told him Kenharingan's words. Then said Bisagit, "Kenharingan has acknowledged this?" and the Torepos said, "He has." So Bisagit got earth and gave it to the bird, saying, "Take this earth and go back." The bird came again to Kenharingan's country and said to him, "I have got the earth," and Kenharingan said, "Well done." In the morning early Kenharingan put Bisagit's earth into the middle of his own and immediately the land became hard, and when it had become hard he made men. Two or three years afterwards Bisagit came and asked for his men, and all Kenharingan's men fell ill of small-pox, half the men died and half lived. Those who died followed Bisagit, and those who lived followed Kenharingan. When Bisagit was going home, he said to Kenharingan, "I am going home, but at the end of forty years I will come back and ask for more men." "Very well," said Kenharingan, "but do not kill all my men, for if you kill all I shall have no kampong² left." And up to the present time Bisagit comes once in forty years

¹ Small green parrot.

² Village.

and takes his toll of one-half of all Kenharingan's men. Kenharingan said to his men, "I am going back to my country in the sky; if there is fever or other disease in your kampong you must menghadji and you will gain relief."

The Dusun of Tuaran do not menghadji for small-pox as it is useless, since there is an agreement between Kenharingan and Bisagit that small-pox shall come once in forty years and carry off half of Kenharingan's men.

THE LEGEND OF THE LIMPADA.

Told by Orang Tua Lengok of K. Bengkahak, Tempassuk District.

Long ago there was a house in which lived a man and his wife, and near the house was a limpada tree. Whenever fruit fell from the tree, the man and his wife heard a noise like that of a child weeping. His wife was afraid at the sound of the wailing, and the man descended from his house, but he only saw the fruits which had fallen to the ground. One of these he pushed with his parang¹ and again he heard a sound of weeping, so taking his parang he cut it in two. When he had opened it there was nothing but earth inside. He went back to the house and that night as he slept with his wife a man came to him in his dream and said, "Why have you cut me? I will be revenged upon you." Then the man spoke and said, "Do not, I pray you, for I did not see anyone when I cut open the fruit, but I only heard the sound of a child crying." The dream man said to him, "Very well, to-morrow you shall see me." The next morning the man saw a beautiful youth, dressed in magnificent clothes, walking below the limpada tree. On the following night the man slept and dreamed again and the dream man said to him as before, "I will be revenged upon you." "Do not, I pray you," said the man. "Well," said the dream man, "I will make a contract with you. Do not damage this tree, do not walk underneath it, do not eat its fruit. If you go under the tree and take its fruit I will afflict you with ulcers until you die."

Now the man who came in the dream was Kenharingan and the tree is his.

NOTE—The limpada, a tree with large leaves and big shiny red fruits with a smooth skin, is looked upon with reverence by the Dusun of the Tempassuk. If they find one when they are clearing a patch of jungle for padi-planting it is either left standing or a religious ceremony must be gone through before it can be cut down. The belief that bad ulcers are caused by going near the limpada is very general. I have made inquiries, but have not been able to hear that this legend is known around Tuaran.

THE MAKING OF THE BLUNTONG (RAINBOW).

Told by Sirinan (Low-Country Dusun) of K. Piasau, Tempassuk District.

Long ago the rainbow was a path for men. Those who lived up country used the rainbow as a bridge when they wished to go down country in search of wives.

¹ Chopping knife.

For though there were women up country the up country men were very fond of the down country women. Because of the men's desire for wives from the coast they made the rainbow as a bridge and you can see the floor and hand rail of the bridge in the rainbow to the present day. The men when they had first made the rainbow walked on it to the women's houses. When the men had fed, the women followed the men along the rainbow to their homes. When they arrived up country the marriages were celebrated with a feast and the men became drunk. Then came a head man from another kampong and said to them, "You men are very clever, how long have I lived in this country but never yet have I seen anything like your rainbow. Do you intend to leave it there or not?" The men replied, "When we want to go down country with our wives we will put it in place, but when we do not want it we will take it away," and thus they do to the present day. What the men were I do not know, but they were more than ordinary men. It is an old time tale of our people. Perhaps it is true, as just now, as you saw, the rainbow vanished.

KENHARINGAN AND THE SNAKE

A slightly different version told by Sirinan Orang Tua of K. Piasau, Tempassuk District.

Kenharingan once pounded rice and made flour from it. When he had made the flour he called all the animals in the world and ordered them to eat it. When they had all got their mouths full and could not speak, Kenharingan asked them "Who can cast off his skin?" Now the snake had only been putting his mouth into the flour and pretending to eat, and being able to answer because his mouth was not full he said, "I can." "Very well," said Kenharingan, "if that is so you shall not die," so until the present day the snake does not die unless killed by man.

THE TOMPOK AND THE SUNGKIAL

Told by Sirinan (Low-Country Dusun) of K. Piasau, Tempassuk District.

NOTE.—Various old jars, probably all of which are of Chinese manufacture, are worshipped by the Dusun as the habitations of various spirits. The Tompok, the Narajang, and the Gusi, three kinds of jars, are believed to contain evil spirits, the Sungkiel is inhabited by a beneficent spirit. Jar worship, especially that of the Gusi, is very prevalent among the Low-Country Dusun of the Tuaran District and \$2,000 to \$3,000 is by no means an unusual price to pay for a single jar. The Tempassuk Dusun say that there were formerly spirit jars in their district, but that they have now nearly all been sold to Brunei traders who have again sold them to the natives of Tuaran, Papar, and other places. "For," say the Tempassuk Dusun, "we

preferred the money to a jar which contained an evil spirit and which demanded constant sacrifices." Only a few Sungkiel jars are now left in the district.

There was once a man who was very rich and had all kinds of goods. After a time he took a wife, but no child came of the marriage for two or three years. Then said the man, "How is it that we have no children while others who were married at the same time all have some." One night the man dreamed that a woman appeared in his room and that he said to the woman of his dream, "Why have we no children?" The woman replied, "You have no children because you have so many possessions. If you wish for a child you must kill a pig and a hen." In the morning he got up, and as he very much desired a child he killed seven pigs and seven hens. Again the man dreamed and the woman came to him in his dream and said, "There is evil in your jar; that is why you have no child. It is in the *Tompok*. The *Nantu* (spirit) of the *Tompok* would like to do you evil but I do not wish it for I am a *Nantu*, also the *Nantu* of your *Sungkiel*. There is also an evil spirit in your *Narajang*. When the year is finished you must always kill a pig for the *Nantu* of the *Tompok*." After a time the man's wife gave birth to a child, and at the end of the year he killed a pig and prayed to the jar, and this he did each year in order that the two *Nantus* should not be angry with him any more.

THE PATH OF THE GHOSTS.

Told by Sirinan of K. Piasau, Tempassuk District.

NOTE.—The ghosts of the dead are supposed by the Dusun of the Tuaran and Tempassuk Districts to ascend Mount Kinabalu.

There is a small river to the "laut"¹ of Kampong Koung named Koraput. There are large stones in the middle of it and the people say the ghosts stop there on their way to Kinabalu. If the ghost of an old man is passing the sound of his walking-stick is heard tapping on the stones, if of a young bachelor the sound of his *sendatang*,² if of a young unmarried woman the sound of the *toreding*,³ and if of a child the sound of weeping.

THE BOBOG (WATER TORTOISE) AND THE ELEPHANT.

Legend told by Sirinan (Low-Country Dusun) of K. Piasau, Tempassuk District.

NOTE.—The Bobog has movable plates on the under side of his shell and with the help of these he is capable of shutting up the whole of his body.

The Bobog was walking one day near the river when he met the elephant. Said the elephant, "Bobog, what are you doing here?" "I am looking for food,"

¹ Seawards.

² A kind of native banjo.

³ A kind of wooden or bone Jew's harp.

replied the tortoise. "Well," said the elephant, "I'm going to eat you." "Why?" said the tortoise. "Because I choose to," said the elephant. "Won't you have pity on me," said the tortoise, "I can't run away, as I can only walk slowly." "If you don't want me to eat you," said the elephant, "I will burn you." "But I am very much frightened of fire," said the tortoise, "if I see it I run away at once into the water. Well," continued the Bobog, "if I don't burn may I try and burn you afterwards?" And the elephant said that he might. So the elephant made a pile of wood as big as a sulap,¹ building it on the sand near the river. "Bobog," said the elephant, "to-morrow morning early you must go into the pile of wood and I will burn you." "Very well," replied the tortoise, "I will go in to-morrow but as I am going in you must keep on calling to me and when I do not answer you any more you can set the pile alight." So the next morning the tortoise went into the heap of wood and for a long time, whenever the elephant called, he always received an answer, at last, however, the Bobog was silent. Then the elephant set fire all round the pile so that there should be no chance of the Bobog getting out. The fire burnt down and the elephant said, "Certainly the Bobog is dead." So off he went to the river to drink; but when he came back there was the Bobog walking about among the ashes of the fire, for he had buried himself in the damp sand of the river and shut up his shell, and thus had not been hurt. "You are very clever to have got out," said the elephant; "how does the fire feel, does it hurt or not?" "It is a little unpleasant," said the tortoise, "but what can one do if an elephant wishes to burn one." So the Bobog asked the elephant to help him to collect wood for his own burning, and for three or four days the elephant brought wood until he had made a heap far larger than that which had been used for burning the tortoise. Then the Bobog asked the elephant when he would go into the heap and the elephant answered that he would go in early the next morning. On the following day the elephant went into the pile and made a nice place for himself to lie down in. Then the Bobog called to him, "Elephant, are you comfortable, for I want to burn you?" "Burn away," replied the elephant. So the Bobog set fire all round the pile and after a time the elephant called out, "The fire is very hot." "Well, I did not say anything about it," said the Bobog. Soon the elephant began to cry out that the fire was burning him. "Be quiet, can't you," said the Bobog. "I never cried out, and besides it's your own fault for you suggested burning me; I should never have thought of burning you." So the elephant was burnt to death, but the tortoise laughed and said, "Ah, elephant, you tried to burn an animal whose back is hard and whose face is hard, besides you cannot dig in the ground as I can." Then the Bobog made a toreding from a small bone of the elephant, and while he was walking along playing upon it he came to a large tree. Now there was a monkey in the tree and he, hearing the beautiful sound of the toreding, came down to see who was playing. "Bobog," said he, "where did you get your toreding?" "From the elephant's bones," replied the tortoise. "How did you get

¹ Small hut.

the elephant's bones?" said the monkey; "I should like to try your toreding." But for some time the Bobog did not let the monkey try the toreding; at last, however, he gave it to him and immediately the monkey snatched it and ran away with it up to the top of the tree; and the Bobog wept because his toreding had been stolen. After a time there came a small river crab and he asked the tortoise why he was crying. "Because the monkey has stolen my toreding," said the Bobog. "Where is he?" said the crab. "Up in that big tree there," replied the Bobog. "All right, don't worry," said the crab, "I will go up the tree after it." Now the monkey had its child with it and when the crab had got up into the tree the monkey's child saw it and called out, "Father," it said, "there is a crab up there close to you." "Oh, nonsense," said the father, "I expect it is only a knob of wood that you see." Then the crab pinched the monkey, the monkey dropped the toreding, and the crab dropped out of the tree. So the Bobog ran to get his toreding and he thanked the crab, "For," said he, "without your help I should never have got it back again."

THE LUNGUN, THE BOBOG, AND THE MONKEYS.

Told by Sirinan of K. Piasau, Tempassuk District.

The Lungun (adjutant bird) was watching at its nest one day and fell asleep, and while it was sleeping, monkeys came and pulled out all its feathers. Then the Lungun cried, for he could no longer fly in search of food. After a time his mate came and brought him food and asked him how he had lost his feathers. The Lungun explained how the monkeys had come while he was asleep, and that when he awoke they were plucking out all his feathers. After two months the Lungun was able to fly, for his feathers had grown again. He thought and thought in what way he could revenge himself on the monkeys, but could find none. One day, however, when he was walking about, he met the Bobog, and he told him how the monkeys had stolen all his feathers and how he had not been able to fly for two months, and he asked the Bobog how he could take his revenge upon the monkeys. "I will help you," said the Bobog, "but you must go and hunt for a prahu¹ first." "What is the use of that?" said the Lungun, "I am not clever at rowing." "Never mind," said the Bobog, "just get it, but it must be one with a good large hole in it, and I will get into the hole and stop it up." So the Bobog and the Lungun agreed to meet again in seven days and the Lungun set out to search for a worn-out prahu with a hole in it. He was not long in finding one, and at the end of seven days the Bobog and Lungun met at the place where the prahu was lying. Then the Bobog crept into the hole so that the water could not get in any more and the prahu floated away down stream with the Lungun standing on it. The monkeys saw the prahu and the Lungun on it and called to him asking him where he was going, and

¹ Native boat.

the Lungun replied that he was going for a sail. Then the monkeys asked the Lungun if they might come with him, and the Lungun replied, "Certainly," for he recognized among them many of the monkeys who had pulled out his feathers. So the monkeys, twenty in all, got into the boat, and when they were enjoying themselves, drifting in the prahu, another monkey called from a tree and he and his companions, twenty-one in number, also got into the prahu. Many other monkeys called to them, but the Lungun would not let any more come into the boat, for he said it would not hold more than forty-one. When the prahu had drifted out from the river into mid-ocean it was struck by waves, and the Lungun told the monkeys to tie their tails together, two and two, and to sit on opposite sides of the boat so that the prahu should not roll. Then the monkeys tied their tails together because they wished to stop the prahu rolling, but the forty-first monkey, who had no tail and only one hand, had no companion. When they were all tied up two and two the Lungun called, "Bobog, I'm going to fly off." "Very well," said the Bobog, "I'll swim off too." So the Lungun flew up from the prahu, and the Bobog coming out of the hole the prahu sank. Then the monkeys tried to swim but could not do so because their tails were tied together. So the fish eat them, and the only monkey who escaped was the forty-first, who had no companion tied to him. As for the Lungun he flew away, saying, "Now you know what you get for pulling out my feathers."

HOW THE BAJAU CAME TO THE TEMPASSUK AND THE DUSUN LEARNT THE USE
OF BEESWAX.

Told by Serundai, Orang Tua of K. Kalisas, Tempassuk District.

There is a tree named kendilong which has a white sap like water, and this sap is very irritating to the skin. The kendilong is a home for bees, and if men wish to take the honey they cut steps in the tree up to the bees' nest.

Once there was a poor man, and every night he dreamed that if he found a kendilong tree he would become rich. So he set out to look for one, and when it was near night he found a kendilong and slept the night there. Now, there were bees' nests in the tree. The next morning he went home and brought two companions back with him. Two men climbed the tree and one stopped below by the trunk. They took the bees' nests but did not know to whom to sell them. Now there was a Bajau who had come up the river in a prahu, for at this time there were no Bajau living in the country. This man met the Dusun who had got the bees' nests, and going home with them he saw four sacks of nests and bought them for a little cloth, saying that he did not know what they were. He said that he would try and sell the nests, and that he wished to become the Dusun's brother. So they swore brotherhood and sacrificed a hen, and the Bajau promised to give the Dusun his share if there were any profit from the nests; at the same time telling the Dusun to collect any more he might find. Then the Bajau sailed away and

the Dusun searched hard for bees' nests. Now the Bajau had promised to return in three months' time, and when he came he brought a tankong¹ full of goods and he found the Dusun's house full of bees' nests. So the Dusun got much goods from the Bajau and became rich, and that is how the Dusun got to know about beeswax.

THE LEGEND OF NONOK KURGUNG.

Told by Orang Tua Lengok, a Low-Country Dusun of K. Bengkahak, Tempassuk District.

Long ago when there were no people in this country of the Tempassuk, there were two people at Nonok Kurgung, a man and his wife. The woman became with child and gave birth to seven children at one time, both male and female, four were females and three were males. When these children were grown up they wished for husbands and wives, and asked their father and mother how they were to get them, as there were no other men in the country. Their father and mother said to them: "Wait, and if our dreams are good you will get your wish." When the woman was asleep Kenharingan came to her in her dreams and said, "I have come because I have pity on you that you cannot get wives or husbands for your children. Your children must marry one another as that was the reason I gave you seven children at one birth." In the morning the woman asked her husband if he had had any dreams, and he said, "No." Then he asked his wife if she had dreamed and she said that Kenharingan had come to her and told her that their children must marry one another. So they consulted together and ordered their children to marry, and after they had been married for some time all the women gave birth each to twenty children at a time, and these children in their turn intermarried. Now at this time the people had no kabuns,² and they got their rice by cutting down bamboo stems; the rice coming out from the inside of the stem. There was a river with many nonok trees near the kampong and the children used to go and bathe there and lie under the trees. Every day they went to bathe there, and every day a child was lost. This went on until twenty children had been lost, and the fathers decided to try and find out what was happening to them. They searched the river and they searched the banks, but could find nothing, and there were no crocodiles in the river. After they had hunted in vain for three days they went home, and when they met together they decided they would run away from the place. So they collected all their goods to start. One night all was ready and the next morning they started out, taking with them their wives and children, their baggage and bamboos to give them padi. After they had journeyed for a day, one man and his family stopped behind to make a house, a second man stopped on the second day, and so on till there was nobody left to journey on. These families which stopped formed kampongs, and from their bamboos came all sorts of food-plants, vegetables, padi, and kaladi,³ and these they planted in their gardens. This is how this country became peopled with Dusun to as far away as Marudu.

¹ Large boat.

² Gardens.

³ Yams.

TOWARDAKAN.

From Orang Tua Lengok of K. Bengkahak.

Towardakan is a son of Kenharingan; Kenharingan made all men equal. But Towardakan did not like this and brought it about that some men should be rich and some poor. For this he was expelled by Kenharingan. Towardakan does not like a good padi year for then all men are well off.

NOTE.—From inquiries made I cannot find that Towardakan is known at Tuaran.

WHY THE DUSUN OF KAMPONG TEMPASSUK DO NOT EAT SNAKES.

Told by Gensiou, a Low-Country Dusun of Kampong Tempassuk.

There was once a man of Kampong Tempassuk in this country who wanted to marry. After he had been married for some time his wife gave birth, not to a child, but to a snake. When the snake had grown large the woman again gave birth; this time to a girl. Some time after the child had been born the man and his wife went to bathe in the river and they ordered the snake to watch the child while they were bathing. So the snake guarded the child, wrapping it round with its body; and when the man and the woman came back from the river it unwound itself from the child and climbed up into the shelf where the padi stores are kept. The snake lived on the shelf for some time and when it had grown a little larger it left the house and travelled about for two days. At the end of the two days it came home and entering the house it went to its father and wound itself about him. It then climbed down to the ground and for the second time wound itself about him and descended to the floor. Then said its father, "Why does my snake son wind himself around me in this way?" so he followed the snake, which had gone off into the jungle, and after a time they came to a dead deer lying on the ground. Then said the man to himself, "Perhaps my snake has killed this deer and that is why he wanted me to follow him." So he went back to the house and the snake followed him, and when they arrived the father of the snake said to his companions, "There is a dead deer in the jungle which my snake has killed." So they went off into the jungle but the snake did not follow. When the men arrived at the place where the deer was they lifted it, and, carrying it home, made a feast. The snake however did not eat but remained on the padi shelf for three days. At the end of three days it again set out and was gone on its journey seven days. Then it returned and again it coiled itself round its father as if it wished him to follow and its father thought, "Perhaps my son the snake has got something again." So he followed the snake and when they got into the jungle there was a dead stag there as before. So the man carried the stag home but the snake stopped on the padi shelf. Then the man said to his companions, "I will put a collar and a bell round my snake's neck for somebody may kill it, as it is poisonous; but if they hear the

bell they will know it is my son and will refrain." So he told all the men of the kampong that his son the snake was wearing a bell, saying, "If any of you see a snake with a bell round its neck do not kill it, for it is my child." Now at the end of seven days the snake set out again, and at length came to the country of Kinsiraban, and the men of Kinsiraban killed the snake and eat it. After a long time the father of the snake heard news that his son had been killed, and set out for the country of Kinsiraban and, finding the snake's collar and bell there, he said, "It is my son." So he made war upon the people of Kinsiraban and killed them. Then he went home and he commanded the people of Kampong Tempassuk not to eat snakes—in memory of his son. And though the Dusun of other kampongs eat snakes, we Dusun of Kampong Tempassuk do not do so to the present day, for the father of the snake was a man of our kampong.

THE PWAK (HORNED OWL) AND THE MOON.

Told by Sirinan of K. Piasau, Tempassuk District.

The moon is male and the Pwak is female.

Long ago when the sky was very low down, only a man's height from the ground, the moon and the Pwak fell in love and married. At that time there was a man whose wife was with child. This woman came down from the house and as the heat of the sun struck her on the stomach she became ill, for the sky was very low. Then the man was very angry because his wife was ill, and he made seven blow-pipe arrows. Early the next morning he took his blow-pipe with him and went to the place where the sun rises and waited. Now at that time there were seven suns. When they rose he shot six of them and left only one remaining; then he went home. At the time the man shot the suns the Pwak was sitting on the house-top in the sky combing her hair. The comb fell from the sky to the ground and the Pwak flew down to get it, but when she had found it she could no longer fly back to the sky; for while she had been looking for the comb the sky had risen to its present place; since, when the man had shot the six suns, the remaining sun, being frightened, ran away up into the air and took the sky with it. And so to the present day whenever the moon comes out the Pwak cries to it, but the moon says, "What can I do, for you are down there below, while I am up here in the sky."

THE ECLIPSE. THE STORY OF THE TAROB AND THE MOON.

Told by Sirinan of K. Piasau, Tempassuk District.

The children of Kenharingan once pounded padi, and when they had pounded it the Tarob¹ came and ate it all up. Every time they pounded padi the Tarob came and ate it up, and at last the children of Kenharingan complained to their

¹ The nantu or spirit who eats the moon.

father and said, "Every time we pound padi the Tarob comes and eats it up." Then said Kenharingan, "If he comes again order him to eat the moon." So when the Tarob came again the children of Kenharingan said, "Don't you eat our rice; go and eat the moon." And down to the present time the Tarob, when he is hungry, goes and swallows the moon, but the Dusun menghadji him and he puts it out of his mouth again, and goes and eats the rice which the Dusun place for him in their winnowing baskets.

THE ORIGIN OF THE BLATEK, THE ROR AND THE PURU-PURU (THREE
CONSTELLATIONS).

Told by Sirinan, a Low-Country Dusun of K. Piasau, Tempassuk District.

Long ago men planted only ubi,¹ kaladi,² and kachang,³ at that time there was no padi. When they had planted them they fenced them round and after a time they cleared away the weeds in the crop. At weeding time they found that wild pigs had been getting in and had eaten all their kaladi. "What use is it," said they, "our planting crops? The wild pigs only eat them." In the evening the men went home to their houses and when it was night they went to sleep. Now one man dreamed and in his dream an old man came to him and he said to the old man, "All my kaladi and ubi and kachang which I planted have been eaten by wild pigs." Said the old man, "You must make a blatek⁴ (spring trap) at the edge of your fence where the pigs enter." Then the man awoke, for it was near morning, and thinking over the dream he resolved to make a blatek near the edge of his garden. So he ate and when he had finished he went out to his kabun and started making a blatek. When he had finished it he set it and returned home and on the fourth day after he had set the trap he went back to his kabun to look if it had caught anything. When he got there he found a wild pig in the trap, but it had become decayed and was not fit to eat. He poked it with the end of his walking stick and found that its head was separate from the body and that the under jaw and teeth had fallen away from the head. The man went home and at night he went to sleep and dreamed that the same old man came to him and said, "What about your blatek, did it catch a wild pig?" "Yes," said the man, "I caught a pig but it had become rotten and I was not able to eat it." "Did you take a walking stick with you?" said the old man, "and did you prod the wild pig's head with the stick?" "I did," said he. "Very well," said the old man, "Do not plant kaladi and kachang this year, plant padi instead." "But where shall I get padi from," said he, "for there is no padi in this kampong." "Well, search for it in other kampongs," said the old man, "if you only get two or three guntongs that will be enough. The marks where you thrust your stick into the pig's head shall be called the puru-puru. The lower jaw shall have its name of the ror, and the blatek also shall keep its

¹ Potatoes, yama.

² A kind of French bean.

³ Caladium, a species of arum.

⁴ Malay "bluntek."

name and all these shall become stars." Then said the man, "I want instruction from you, for if I get padi how am I to plant it." Said the old man, "You must watch for the blatek, the ror, and the puru-puru to appear in the sky and when shortly after dark the puru-puru appears about a quarter way up in the sky, that is the time to plant padi. The puru-puru will come out first, the ror behind it and the blatek last of all." When the man woke up he found that the old man's words had come true and that the puru-puru, the blatek, and the ror had become stars, to the present day they follow this custom and the padi is planted according to the position of these stars as seen shortly after dark (about 7 o'clock).

THE STORY OF LANGAON.

Told by Sirinan, a Low-Country Dusun of Kampong Piasau.

Langaon had made a kabun sufficient in which to sow two mandores of padi and after a time it bore fruit. When the padi harvest came the men of the kampong went to reap in their kabuns and Langaon went also to reap in his, but when he had finished his reaping he found the produce of it was only two mandores, just what he had sown at first. "Why is this?" said Langaon. "Other men all have a good return from their sowing; I alone have no padi." So he went to the old men of the kampong and told them about it. However, he decided to make another kabun and this time to sow three mandores. So he made his kabun, and sowed three mandores, and when his padi came up it was better than anyone else's in the kampong; when it began to fruit too it was finer than that in any other kabun. At length harvest time came and Langaon this time got three mandores of padi for his harvest while every other man had at least a full tankob. Then he made up his mind to leave the village and search for better ground in which to plant padi. So he set out and after he had wandered for a long time in the jungle, at last he came to a small river and made himself a sulap there. Here he stopped and made borusats¹ in the stream. The next morning he went to look at his traps, and found that he had got a large catch of fish. "Then," said he, "it would be good to stop here for there is no lack of fish; only I have no salt and no padi, and how can I live without them?" So he set out with his fish to look for some place where he might sell them for salt or padi. After a time he came to a kampong and the people said to him, "Oh, Langaon, where are you going?" "I have run away from my kampong and am living near the river," said Langaon. "I have caught many fish but as I have neither salt nor padi, I have come here to sell them." Then they called him to come into the house and they gave him padi and salt and cooking pots and mats in exchange for his fish. So Langaon was much pleased and the people of the kampong asked him to come every day and bring them fish. When he got home he had sufficient to eat and vessels in which to cook, for hitherto he had used bamboo.² So he decided to stop at the river, and make himself a large

¹ A kind of fish trap.

² Large bamboos cut into lengths are used for cooking in.

hut. The next morning there were again many fish in his traps and Langaon thought, "I shall be ashamed if I go every day to the kampong, so I will dry these fish in the sun, and to-morrow I will take them the dry fish and any fresh fish I get from the traps." On the following day, Langaon again went to the kampong, and the people of the kampong gave him parangs¹ and spears and cloth in exchange for his fish. Then Langaon said to himself, "I had better tell them I shall not come again at once, as the river has fallen since there has been no rain, and until rain comes again I shall have no fish." So he told them, but they said to him, "If you have no fish, come all the same." Langaon went home, and though he got many fish he did not go to the kampong for another week. At last, however, he started for the kampong with his fish, but when he got there, he said, "To-day I do not wish to sell my fish; I will divide them among you, but I will not take anything in return." So he divided the fish among them and each man got two tempurongs² full. "Why do you not ask a price for your fish," said the people of the kampong. "I am not without food," said Langaon, "I still have much left from what you gave me before, but if I have no food left and catch no fish, I will come and ask you for what I want." So it was agreed, and Langaon asked them when was the time for making kabuns there, and they said, "As soon as this month is finished we begin to make them." When the month was finished, Langaon went back to the kampong, bringing with him a little fish to give to the people, and again he asked them when they would start making kabuns. "Oh, any time we feel inclined," said they, "to-morrow or the next day," and they asked him to come and live in their kampong, but Langaon refused. So he went home and the next day he began to make a kabun, and when he had cut down all the trees, his kabun was large enough to sow two mandores of seed in. "Well," he thought, "I will rest a little till other people begin to burn" (the cut trees). After about twenty days he saw great quantities of smoke coming from near the kampong and going to his kabun, he fired it until not a single tree trunk was left. "This is troublesome," thought he, "I have no seed to sow in my kabun." In the morning, he took his fish with him and went to the kampong to ask for seed, and when he was still far off, they started calling to him to bring his fish. So he divided his fish among them, everybody getting a tempurong full; and the people of the kampong asked him if he had sown his padi. "Not yet," said Langaon, "I came here to-day, to ask you to give me some seed." "How big is your kabun?" "About two or three mandores large," replied Langaon. So each man in the kampong gave him a mandore of seed, until there were none left who had not given. "Why do you give me so much?" said Langaon, "for my kabun is not a large one, only enough for two mandores. If each man were to give me one or two tempurongs full I shall not finish it, but this you have given me is much more than I shall use; besides, how shall I get it home, for I shall only be able to carry two or three

¹ Jungle knives.

² A half of a coconut shell used as a drinking or food vessel.

mandores." "Never mind," said the men of the kampong, "whatever you do not want to sow you can leave here, and you can use it to eat." So when he went home he took only three mandores of seed with him, and the next day he started and sowed two mandores in his kabun. The padi sprouted and thrived, and Langaon said, "Ah, perhaps this year I shall have plenty of padi," and each day he went to his kabun, though there were no weeds in it. At last he said, "What use is it for me to go to the kabun for there are no weeds in it," and for six days he remained at home. On the seventh day he went back and found that Maragang¹ monkeys had broken into his kabun and damaged his padi. Then Langaon wept, "Ah," said he, "all my padi has been destroyed." So he tried to raise the stems which the monkeys had beaten down, and he resolved to move his house to the kabun, so that he might guard what remained of the crop. He stayed there at the kabun until his padi had recovered, and when it was ripe, he said to himself, "I must make my binolet."² Then he went into the jungle to get wood for the binolet, and slept a night there, but when he returned home he found not a single grain of padi left in his kabun, all the ears of grain had been taken and only the straw left standing, and there were tracks of many monkeys everywhere. "Ah," said Langaon, "I will run away from here, for first of all the monkeys damaged my crop, and now when it is ripe they have come again and eaten it all." So he set out again, and after he had wandered in the jungle for a long time, at last he made another sulap, but this time there was no river near, and he had to live on whatever he could find in the jungle. He had brought away with him the one mandore of padi seed which he had not planted in his former kabun, and here he again made a kabun and sowed the seed in it. This time he made his kabun round his house so that he might keep a guard on his crop, and when the padi came up it was very good. There he lived until his padi was in the ear. One day he went to fetch water from the river and on coming back he saw a great many Maragang monkeys near his kabun; though they had not yet entered it and eaten his padi. Then he dropped his water vessel and went to drive away the Maragangs, but the monkeys attacked him, and Langaon ran away, for he had first come from the river, and had neither parang nor spear with him. When he got to his sulap he snatched up his spear and wounded one of the monkeys and they all ran off, except the largest of them, which still fought with him. Then Langaon retreated from the monkey backwards, until without noticing it, he became entrapped between four large tree stumps which stood in the kabun; and there both Langaon and the monkey stopped fighting while after some time the monkey suddenly became transformed into a beautiful woman. Langaon seeing this, came out from the tree stumps and spoke to her. "Where do you come from?" said he. "My mother ordered me to come here," replied the woman. "When you made a kabun before, I came there also, but you did not guard your padi. The padi which you said monkeys ate was reaped and I also was among the reapers." "Where did you put the padi?" said Langaon. "In my house," said the woman, "and the people of my

¹ Proboscis monkeys.² Wooden store vessel for ears of padi.

kampong reaped with me." "Well," said Langaon, "I have no food, for this padi is not yet ripe." "You had better come home to my house," said the woman. So Langaon followed the woman home, and found that her house was in the jungle, and not far from his kabun. "I am alone here," said she, "for my father and mother and my companions are in my kampong which is a long way off. My father has much pity for you because you have no wife, and I also. All this padi in my house is yours, for when you made the kabun in your village, it was I who stole your padi, and when you made a kabun by the river, I went there also." So Langaon stopped there, and the woman told him how she was really a Maragang monkey, but had become a woman. Then she became his wife, and Langaon said, "I will search for some kampong near, for it is evil for us to be all alone here." "Oh," said the woman, "if you want a kampong, there is one not far off," and she pointed out a kampong to him which he had not noticed before; but his wife besought him not to go there, and so he remained with her. At last, when they had a child, Langaon said, "I should like to go to the kampong, if I start to-day I shall return to-day also, for it is not far away." His wife said, "Do not go, for I shall be very much frightened, while you are away there." But Langaon did not pay attention to his wife's words, and after a while she said to him, "Well, if you go do not sleep the night there, for I shall be all alone here with the child." So Langaon started off, and when he got to the kampong he found a great feast going on, and joining in it he became drunk and forgot about going home. For seven days he stopped there eating and drinking, and on the sixth night he fell in love with a woman of the kampong. However, on the seventh day he started home, and when he came to his house, his wife was very angry and would not speak to him. "Why are you angry?" said he. "Why should I not be angry," said his wife, "for you have been unfaithful with another woman, for though you were far off, I know it, and you have a mark on you by which I can tell." But Langaon denied it. "If," said his wife, "you deny it, I will take from you the mark by which I know that you have been unfaithful." "You may take it," said Langaon. "Well," said she, "I will show you, for I am the God of your kampong (Kenharingan Tumanah)," and taking a looking-glass she showed him the appearance of the other woman and himself in the glass. Then said Langaon, "It is true." "I will leave you," said his wife, "and take the child with me, for you have now a wife in the kampong." But Langaon asked for pardon, saying he would pay what was according to custom, as a recompense. But still his wife refused to stop with him; so when it was near night he bound her hands and feet to his, for he was frightened that she would run away. So they slept, but when Langaon awoke in the morning, the ropes were opened, and his wife and child had gone. Then Langaon wept, for he did not know the kampong in which his wife lived. On the second day he stopped weeping and started out to look for his wife, "For," said he, "wherever I find a kampong there will I search." So he wandered in the jungle and one day he met a herd of deer which attacked him. Then Langaon ran away and crept into a hole in the ground and hid, and the deer could not catch him.

The next morning he came out of the hole and started again, but he had not gone far before he met a herd of wild pigs and these also attacked him, and as before he ran away until, coming to the same hole, he again got into it to hide. There he slept and dreamed, and in his dream a man came to him and said, "Langaon, you are a coward to run from the deer and wild pig, for if I were looking for my wife I would fight them." "How can I fight them," said Langaon, "for I am all alone and they are many?" "If you journey again to-morrow and are brave," said the man, "you will get your wife back, for she will ride a rhinoceros." "Formerly I was not afraid even of the rhinoceros," said Langaon, "but I found that I was afraid of these stags and wild pig." "If you are afraid," said the man, "you will not get your wife back." "How shall I know the animal she is riding," said Langaon, "for the other animals had no one riding them?" "You will know the one," said the man, "because it will have bells on it; that is the one you must hunt, but do not let it go or you will lose your wife." In the morning Langaon awoke, and set off early in search of his wife, and, after a time, he came upon a herd of rhinoceros and among them he saw a large one which had bells hanging round its neck. So he waited for the rhinoceros with the bells to attack him, and did not run away, and when he caught hold of it by the bells round its neck all the rest of the herd vanished. The one he had caught also tried to escape, but Langaon struggled with it for three days, until he stumbled and fell close to his own house, and in falling he let go the bells. The rhinoceros disappeared and Langaon sat down to think outside his house. After a time he heard a child begin to weep inside and he went in to see who was there, and opening his door found that his wife and child had returned.

NOTE on Kenharingan Tumanah. The form of oath generally in use among the Dusun runs as follows: "I swear by Kenharingan above and by In-the-Earth (*dalam Tanah*), i.e., by Kenharingan Tumanah, the God of my kampong, that I will speak the truth, if I do not do so, may a crocodile eat me, may a tree fall on me in the jungle, etc., etc.

THE LEGEND OF LIGAT LIOU.

Told by Sirinan, a Dusun of K. Piasau.

There was once a man named Tamburan. One day he took his parang and spear and his bareit¹ and went off to look for vegetables in the jungle, for he was poor and had no food. He searched and searched but could find nothing; at last, however, he came to an old kabun and seeing a sulap near it he went to look if there were any people in it, for he thought that the kabun was still being used as there were many gourds there. Putting down his bareit and spear he climbed up into the hut, and there he saw a woman lying down. Now she was

¹ Small carrying basket.

unable to sit up because her head was very large while her neck was only as thick as my little finger. The woman, whose name was Ligat Liou,¹ spoke to him and said, "Tamburan, why have you come here?" "I have come looking for vegetables," answered Tamburan, "for I have nothing to eat and nothing with which I can buy padi." "If you are hungry," said Ligat Liou, "there is some rice ready cooked there on the saleian,² which you can eat and you will find fish there too." "How does she manage to pound her rice," thought Tamburan, "for she cannot even sit up." Then he said, "I do not like to eat alone." "I have eaten just now," said Ligat Liou, "do not be ashamed to eat." So Tamburan took the rice and ate and when he had finished Ligat Liou asked him to come and search for lice in her hair; so he went to search, but instead of lice he found in her hair scorpions and little snakes and centipedes and all other sorts of poisonous animals. Then he killed them all till there were none left and Ligat Liou thanked him, saying that none of the women who came there would search for lice in her hair. "But now," said she, "I shall be able to stand up, for my head is light since I am free of all these lice." So she stood up and said to Tamburan, "Take seven gourds from this kabun." So Tamburan took the gourds and brought them into the sulap. Then said Ligat Liou, "Take this first gourd as soon as you get home and cut it in two; the second one cut open when you get into your room; the third you must open in your store room; the fourth on the padi shelf, the fifth on the verandah, the sixth below the steps, and the seventh below the house." Then Tamburan went home and on reaching his house he did as Ligat Liou had instructed him, for his children were crying for food. When he cut open the first gourd he found rice and all other kinds of food ready cooked in it, together with plates and drinking cups. So they ate and when they had finished he cut open the second gourd in his sleeping room and in it were mats for sleeping on and all the furnishings for a bedroom. The third gourd he opened in his store room and from it came gongs of all kinds, tawags³ and chenangs⁴ and tenukols⁵ and other goods besides. The fourth gourd he opened on the padi shelf and from it came great quantities of padi. The fifth he opened on the verandah and in it were many hens. The sixth he opened below the steps and out of it came great numbers of pigs. The seventh held many kerbaws; this also he cut open, as he had been ordered, within the fence below the house. Now when the gourds were cut open there was a man in the house named Sikinding, who lived in another room. This man was also poor and he came to Tamburan and said, "Brother (Pori San), where did you get all these goods from?" Said Tamburan, "I was astonished at getting them myself, for I dreamed I was rich and when I woke up I found it was true." "Ah," said Sikinding, "I always dream at night but I have never become rich from it," for he did not believe

¹ Little neck.

² Shelf above the fire.

³ Two kinds of gongs. The tawag-tawag is a thick and deep gong with a protruding boss.

⁴ The chenang is a shallow gong in which the boss is almost on a level with the surface.

⁵ The tenukol, a large and rather cheap kind of gong.

Tamburan's words. "It is true," said Tamburan, "for you know well that yesterday I was as poor as you and went with the rest of the men to look for vegetables in the jungle." But Sikinding still did not believe him and said, "Perhaps you got them from someone." "I spoke truth," said Tamburan, "and this is my dream, I dreamed that I came to an old kabun and that I went into a hut there, and that I got the goods from the person who lived in the hut." "Well," said Sikinding, "I will try and find this kabun and the person you dreamed of." "Just as you like," said Tamburan, "for as I told you I only dreamed of the place." "I shall start to-morrow," said Sikinding. "Well, I am not ordering you," replied Tamburan, "you are going to please yourself." So the next day Sikinding set out to look for the kabun, but having searched for two days and not finding it he went back and told Tamburan that he thought he was a liar, saying that he had searched for the kabun for two days and not found it. "For," said he, "I think you really went to the kabun and not that you dreamed about it." But Tamburan again replied that it had been a dream. "Ah," said Sikinding, "I don't believe you, how many times have men dreamed in this kampong and never yet got rich from it." "Well, try once more to find the place," said Tamburan, "and perhaps you will succeed." So on the next day Sikinding set out again and not finding it returned after he had searched for four days. Thought Sikinding, "Perhaps Tamburan is trying to kill me by sending me into the jungle, this time I will take my spear and parang when I ask him, and if he will not tell me, I will kill him." Then Sikinding went to Tamburan's door and said, "I still do not believe your story though I have hunted for the kabun for four days. If you do not tell me the truth this time I will kill you, for if my luck had been bad in the jungle I should have died there." But Tamburan still declared it was a dream, and Sikinding getting angry snatched the sheath from his spear and Tamburan ran away. Then Tamburan cried out that he would tell the truth, for he was afraid that Sikinding would kill him; so Sikinding stopped chasing him and Tamburan told him how he had gone to the kabun and how he had marked the trees with his parang, so as to know the way back. "Well," said Sikinding, "I will not kill you if you will show me the way." "But, perhaps," said Tamburan, "you will not be brave enough to hunt for the lice in her hair." "Oh," said Sikinding, "however brave you are, I am braver." "Well, when you come to the kabun," said Tamburan, "if anybody asks you to search for lice, you must not be afraid, for many men have been there, but I only was brave enough." "Oh, I shall not be afraid," said Sikinding. So the next day he set out and followed the marks which Tamburan had made on the trees, and at length he came to the kabun. When he was still some way from the hut he began calling out to know if there was anyone inside; but no answer came. So when he had come to the hut he put down his bareit, and going in saw Ligat Liou there and she said to him, "What do you come for?" "Oh," said Sikinding, "I have no padi and I have come to look for vegetables; I am very hungry; where is your rice?" "How should I have rice?" said Ligat Liou, "for I cannot get up to pound it." "Oh! that's not true," said Sikinding, "for how can you live if you have no rice?" "Well, it is true," said Ligat Liou, "for as you

see yourself I cannot get up." So Sikinding went to get her rice from the shelf over the fireplace, but on taking down the plate he found nothing but earth in it. "Ah," he said, "you people in this kampong are no good; you eat earth." "I told you I had no rice," said Ligat Liou, "but you can take a gourd from the kabun." Then Sikinding went and took a gourd, and going up again into the hut he asked Ligat Liou how he was to eat it. "You must cut it open," said she, "and eat what is inside it." So he cut it open and found a little rice and one fish in it, and from this he made his meal. When he had finished eating the rice and fish he said to Ligat Liou, "That is not enough; I'll go and take another gourd and that will be sufficient." "You can take another," said she, "but only one." So he brought another gourd, and cutting it open found inside it only rice in the husk and uncooked fish. "I've not had enough to eat," said he, "where can I get it from?" "You can cook the food here," said Ligat Liou. "No, I won't do that," said Sikinding, "I will take it home and cook it; but I want seven gourds to take home with me." "I will give them to you," said Ligat Liou, "but first come and look for lice in my hair." So Sikinding went to look for lice but when he saw the scorpions and snakes and other poisonous things he cried out and was not brave enough to kill them and he let Ligat Liou's head fall first to one side and then to the other. "Well," said Ligat Liou, "if you are afraid to kill my lice you had better go home. But take one gourd with you; you may take a large one, but do not take more than one." Then Sikinding took the gourd and Ligat Liou said to him, "When you get home and wish to open this gourd, get into your tankob¹ and make your wife and children get into it as well; but shut up the top of the tankob well so that nothing can get out." So Sikinding ran home and calling his wife and children, they all got into the tankob with the exception of one small child, for whom there was no room. Then Sikinding opened the gourd and from it came out snakes and scorpions, which bit Sikinding and his wife and children until they died. The only person who remained alive was the small child for whom there had been no room in the tankob.

NOTE.—A variant of this tale is known among the Dusun of Tuaran. Tamburan is, however, replaced as hero by a man named Rahah Bujang, and there are other points of difference.

THE LAZY WOMAN AND HER BAYONG.

Dusun story told by the Orang Tua of K. Tarantidan, Tempassuk District.

Long ago there was a very lazy woman; she would not work and as for bathing she was so lazy that she only washed herself once in ten days. One day she went to the bathing place and a nipah palm called to her from across the river. The palm-tree kept on calling her but she was too lazy to answer or to cross the river to see what it wanted. At last the nipah said, "Why are you so lazy that you will

¹ Large store vessel for padi, made of tree bark.

not cross the river? There is a prahu there on your side of the water and you can row across and take my shoot." So the woman went very slowly and got the prahu and going very lazily across the river in it, she took the shoot from the palm. Then said the nipah, "I called you because you are so lazy. You must take this shoot and dry it a little in the sun and make a bayong¹ from it." Now the lazy woman nearly wept when she heard that she was to make a bayong; however, she took the sprout home and made a bayong from it. When this was finished it spoke to the woman and said, "You must take me along the path where people are going to Tamu² and put me down near the side of the road where everybody passes, then you can go home." So the woman took the bayong and left it near the road where people were going to Tamu. Many people passed there, but no one noticed the bayong until a rich man came along and, seeing it, said, "I will take this bayong to Tamu as it will do to put anything I buy there into, and if the owner is at Tamu I can give it back to him." Presently the rich man came to the Tamu and he asked everyone there if they had lost a bayong, but nobody acknowledged it. "Well, then," said the rich man, "it is my gain and I will put what I have bought into it and take it home; but if anyone claims it they can come to my house and get it." So the rich man put all his goods: sireh, lime, cakes, fish, rice, and bananas into the bayong until it was full, and while the man was talking to some of his friends, the bayong started off at its own accord to go home to the lazy woman's house. When it was still some little way off from the house it began calling to the lazy woman, "Come here, come here and help me for I can't stand the weight." Then the woman went to the bayong, though she was nearly weeping at having to go and fetch it home, but when she saw that it was full of all sorts of good things she said, "This is a splendid bayong, but perhaps it will want some payment. At any rate if it is always like this I shall get an easy living by just leaving the bayong on the road to Tamu." So on Tamu days the woman always placed the bayong near the side of the path and it always came home full; but it never met any of the men who had found it before until it had cheated six men. Now at the seventh Tamu the men who had filled the bayong at the six previous Tamus and had thus lost their property, happened to be going to Tamu all together and when they saw the bayong left near the road they all recognized it as the one which had cheated them. So the six of them collected buffalo dung and filled the bayong to the top, "For," said they, "this bayong is a proper rascal." Then the bayong being full started off straight for home and did not go to the Tamu. When the lazy woman saw it coming she rushed to help it home, but when she found it was full of buffalo dung she began to cry, "For," said she, "if the bayong does not bring me food, surely I shall die." As for the bayong it would never bring food from the Tamu again.

¹ A large basket for carrying, made from the nipah shoot; it has no cover.

² Market.

KADUAN.

Dusun legend told by Limbong Orang Tua of K. Tambahilik, Tempassuk District.

Once there was a man named Kaduan who had a wife and seven daughters. His wife and daughters were ill with balang,¹ and they were all so hungry that in a short time they would have been reduced to eating the ashes from the fire. Then Kaduan said to his daughters, "It is no good going on like this, I will search for husbands for you." Now his daughters were wearing "dampon"² for clothes. They said to him, "Father, why do you want to search for husbands for us. It is not fitting; for we are women, besides we are almost dying with disease and we are so poor that we have nothing to eat; our house, too, is worn out and the roof beam has fallen down at one end till it touches the ground?" However, the next morning Kaduan set out, and at length came to a pengkalan³ on the river, where the sand of the river was composed of beads of gold; there were also Kalian trees there whose fruits were gongs and bells and the gongs and bells were sounding in the wind. So Kaduan bathed and crossed the river to the house of a man named Gerlungan. The place below the house was full of fowls, for Gerlungan was very rich. Then Kaduan climbed the steps of the house and Gerlungan met him and asked where he was going. "I am looking for husbands for my daughters," said Kaduan; "for, though it is not very fitting that I should seek for them, still your people are the same as mine both in appearance and in wealth. I have been in the jungle for seven months, and my clothes are worn out, but when I first left my kampong they were all covered with gold like those which you are wearing." "How hungry you must be," said Gerlungan, "after being in the jungle seven months. I will cook food for you." Said Kaduan, "If you cook for me do not cook as for three or four men, but for five or six, for I am very hungry indeed." So Gerlungan had rice cooked in huge pans and with the rice he gave Kaduan three fowls. When Kaduan had finished the rice a man in the next house remarked, "How big is this man's stomach, it must be like a basong." Then Kaduan turning round looked at the trenchers from which he had eaten and they had again become piled up with fish and rice, but no man had put the food upon them, it had appeared of itself. Perhaps it is true that this man is rich in his own kampong, thought Gerlungan, for he had finished the food, but when he turns round to look at the plates from which he has eaten they become full once more. Then Kaduan ate again, and he said to Gerlungan, "Inquire of your sons whether they will marry my daughters, for I am tired of searching for husbands for them since I can find none like them for beauty in this country and none who can approach me in respect of my wealth." So Gerlungan inquired among his seven sons and the eldest said, "Father, I do not wish to go for I

¹ A very bad skin disease.

² Cloth made of tree bark.

³ Bathing-place.

have never seen this man Kaduan before and I do not know what sort of a man he is, whether good or bad"; but his seventh son said, "Whatever my father orders I will follow." "Perhaps you think he is poor," said Gerlunghan, "but his clothes are worn out because he has been so long in the jungle." So the eldest son refused to go, but at last seeing that the others were willing, he said, "Well, I do not wish to be left behind so I will go too." "If it is settled," said Kaduan, "I will go home for seven days, at the end of that time I will come back and marry your sons for it is not right for my daughters to come here, for it was I who sought husbands for them." So Kaduan went home and when he got to his house he found his children eating the ashes from the fire. Said he to them, "I have found husbands for you, the children of Gerlunghan, and in seven days I go to marry them." "You will only make us ashamed," said his daughters, "for we are all ill with balang and we have nothing to eat." "Why do you not follow my orders," said Kaduan, "as Gerlunghan's children followed his?" When the time was up Kaduan started off again in his clothes made of dampon.¹ At last he came to Gerlunghan's, and before he climbed the steps he called to Gerlunghan and said, "I have come here in my old clothes for everyone knows how wealthy I am, and I was afraid of being robbed and killed by the way for the sake of my golden clothes; for the clothes I wear are always of gold; my house is seven doors long, and the windows in the roof are seven also, my sleeping mats, too, are more than a span high from the floor. I have seven jars for my arrack, and when I eat I have five trays of rice before me and I finish them at a meal." Then somebody said, "A man who eats like that should have a big stomach"; but they looked at his stomach and saw it was like that of a man who eats but seldom, and they were all astonished. "Well," said Kaduan, "my feast is ready at my house, and you, Gerlunghan, must follow me with your sons, but though I have killed buffaloes and cooked rice I have not a single fowl." The next day they set out for Kaduan's house, Kaduan, Gerlunghan, and his seven sons, and Kaduan walked as though he were flying, so that he had always to stop and wait for Gerlunghan and his sons. Thus Kaduan arrived first at the house and told his wife and daughters to run out of the house and hide. So they rolled away into the jungle, for they could not walk because of their balang. When Gerlunghan and his sons came to the place they looked about expecting to find a beautiful house, but all they could see was a small tumble-down house with a path leading to it which looked like the track of a single man—Kaduan himself had also run off into the jungle. After a time Kaduan returned saying, "Gerlunghan, you can kill me." So he asked first one and then another to kill him but no one was willing. Then Gerlunghan's youngest son said to his father, "I will strike him," and snatching out his parang he wounded Kaduan on the arm, cutting him to the bone, and much blood came from the wound. Now as Gerlunghan's son yelled and chased Kaduan near the house, the blood which fell from Kaduan's wound turned into buffaloes and cattle and fowls. The house also became new and beautiful, and the sound of gong

¹ Tree bark.

beating was heard from within. Then Gerlunghan marvelled and said, "This man is even more wealthy than I." But Kaduan went to look for his children in the place where he had hidden them and he found them well and beautiful and dressed in magnificent clothes, and Kaduan's own clothes also had turned to gold. So Kaduan killed seven buffaloes and seven cattle and brought out seven jars of tapai,¹ and made a great feast for Gerlunghan, and when the eating and drinking were over Gerlunghan returned home, but his sons remained with Kaduan.

THE MOSQUITOS' KAMPONG.

Bajan legend told by Si Ungin of K. Kotabelud.

A long time ago a man was once hunting in the jungle and when it was near nightfall he wished to return home, but having wandered from the path he was unable to find it. While he was still searching for the way he came upon a large house near a kampong. So he went into it and meeting there an old man he told him how he was lost and asked for leave to sleep there. "Yes," said the old man, "you can sleep here, for you cannot find your way home to-night, as it is already dark." After a time, other people, men, women, and children, came to the house, and the old man told them about the stranger, saying, "Let us give him a bed for the night." Then they brought him food, but instead of water they gave him blood, and for rice they gave him maggots. "Perhaps I am among evil spirits," thought the stranger; so he ate a little of what they had given him. "Why do you not eat?" said the old man; and the stranger replied that he was troubled about having lost his way home. "If you cannot find your way home," said his host, "to-morrow I will send one of my men with you to show you the path." Then the women of the house said that they would find him a mat to sleep on; but when they brought it, it was only a banana leaf. So the stranger and the people of the house lay down, but the former could not sleep owing to the great number of mosquitos. Then as he heard none of the other men in the house striking at the mosquitos, he thought, "Perhaps this is the mosquitos' kampong," and so he also did not try to kill them but brushed them gently from his body; and when he had done this once they no longer returned to disturb him. However, he did not sleep for he was afraid. When morning came the old man looked at the stranger's mat and seeing no dead mosquitos there he said to him, "Well, my son, you wish to go home and you shall have someone to show you the way. This, my younger brother, shall go with you, and you shall become brothers to one another, only do not bring him to your house but let him go when you find your path; for we are all mosquitos, and that was man's blood you drank last night. You must take this bombong² with you, and when you get home call your father and mother and brothers and sisters to see what it contains, but do not open it before you get to

¹ A kind of intoxicating drink made from rice.

² Bamboo box.

your house." So the stranger went home, the old man's younger brother accompanying till he found the path. When he got to his house he told his relations what had happened to him and how the old man had given him the bamboo box and had ordered him to open it in the presence of his father and mother; speaking thus, he opened the box and from it he brought out gold ornaments, rings and bracelets, and fine clothes. Now when the stranger's elder brother saw the gold and the fine clothes he said, "I also will go to the kampong and tell the people that I am your brother." So he started and after a time he too lost his way in the jungle. When it was near night he came to the kampong of the mosquitos and asked the old man to let him sleep there; and he told the old man how his brother had lost his way in the jungle before and how he had come upon a house when he was lost and that the people of the house had given him gold and fine clothing. "But," said he, "I do not know if this is the house." Then the old man ordered them to bring food for the elder brother, and for water they brought him blood, and for rice, maggots. "What sort of food is this you give me?" said the elder brother. "Blood and maggots! I cannot eat it." When the time for sleep came they brought him a banana leaf instead of a mat; and he said again, "What is this you have brought me? This is a house not the jungle. I want to sleep on a mat, not on a banana leaf." Said the old man, "These are our mats; sleep on it if you will, but if not what can I do, only do not say I have no respect for you." So the elder brother slept, but before long he awoke and found that he was being bitten by swarms of mosquitos. Then he started slapping away at them right and left, and in the morning when he wished to go home there was no blood left in his body. In the morning the old man told him that he must return and gave him a bamboo, telling him not to open it till he came to his house. "But," said the elder brother, "how can I go home for I do not know the way!" The old man replied that he must find the way for himself. So setting out he at length came upon the path and reached home safely. Then he called together all his relations and friends and said, "I also have got a bamboo and I think there must be gold and fine clothes in it too." But his younger brother asked him, "Did a man guide you home?" and the elder brother said "No." So the elder brother opened the box and from it came out scorpions and centipedes and other poisonous animals and stung him to death, but no one else in the house was touched by them. Thus the elder brother fell down and died; and the younger said, "My brother must have offended the people of the kampong."

Mosquitos do not make their buzzing unless they are near men's ears and then they say, "If these were not your ears I would swallow you." (Si Ungin.) [Bajau version.]

Dusun Version.

The mosquito says, "If these were not your horns I would swallow you."
(Sirinan.)

THE BELUKUN (THE SCALY ANTRATER).

Dusun legend told by Sirinan of K. Piasau, Tempassuk District.

A long time ago there was a man named Andarian who went into the jungle to look for vegetables. He carried his basong¹ on his shoulders and as he was searching for vegetables he said aloud, "This is why I have to search for vegetables to eat; because I have nothing with which I can buy padi." Then a Belukun who happened to be near said, "Oh, Andarian, what is your work in the jungle here?" Said the man, "My children are crying for food, and the vegetables I am gathering in the jungle are all I can find to give them." "Come here," said the Belukun. So Andarian went to the place where the Belukun was sitting in a hole in a tree, and the Belukun again asked him why he was looking for vegetables. Andarian replied again, "Because I have nothing with which I can buy food." "Very well," said the Belukun, "you can throw away your vegetables." "Why does he want me to throw them away," thought Andarian, "I don't see any padi in his place in the tree." However, he took his basong and poured the vegetables out of it. "Now," said the Belukun, "place your basong beneath my anus and strike me gently on the back, only do not strike hard." So Andarian struck the Belukun gently on his hinder parts and cloth and cooked rice and fish ready boiled came out from the Belukun until Andarian's basong was full. Then the Belukun told him to stop striking. "For," said he, "your basong is full. You had better eat," said the Belukun, "for I know that you are hungry; and when all the rice in the basong is finished you can come here again." So Andarian sat down and ate, and when he had finished he went home. Then he called together all his people and they also ate their fill, but while they were eating a dog came and a grain of rice fell upon its head. Now this dog belonged to a woman named Lintago, and when it went home she saw the grain of rice sticking on its head. She took the grain from the dog's hair, and wondered from where anyone had got rice, for the kampong was starving; she put it into a large jar full of water. Then she called all her people to "eat rice," and they drank the water in the jar till it was all finished. But one of Lintago's little children swallowed the grain of rice, and Lintago was very angry and asked who had eaten it. "For," said she, "I wished to divide it so that everyone might have a little." So she asked all the people of the house about it until she was told that the little child had eaten it, and, being angry, she beat the child. "I will find out where this rice comes from," said Lintago, and she started off to inquire in the kampong. At last she came to Andarian's house and she asked him where he had got rice from. "I have no rice," said Andarian. But Lintago asked him again and again if he had not got rice, but Andarian always answered "No." "Very well," said Lintago, "if you will not tell me to-day I will kill you." Then Andarian became frightened and said, "It is true the rice was mine, but it is finished."

¹ A kind of large basket.

"Where did you get it from?" asked the woman, and Andarian told her how he had got the rice from the Belukun. So Lintago ran home and got a basong as big as a house, and off she went into the jungle, saying that she would not stop hitting the Belukun until he had filled her basket. When she got to the place where Andarian had been she started calling out that she was gathering vegetables as she had nothing with which she could buy food. At last the Belukun called to her, "Oh, Lintago." "Where are you?" said she. "Here I am," said the Belukun, and he came out of his hole in the tree and asked what she was doing. "Oh," said Lintago, "I heard how Andarian got rice here, and I also am too poor to buy it. Will you give me some?" "I have not much," said the Belukun, "but there is a little," and he told her to place her basong as Andarian had done; "But," said he, "when you strike me do not hit me hard." "If you do not fill my basket," said Lintago, "I will not stop hitting you," and she began to beat him hard; but there came from him only wood potatoes¹ and kaladi, and when the basong was nearly full, about a gantang measure of uncooked rice and also a little raw fish. When the basong was full, Lintago went off with it as fast as she could to get home. So they eat the kaladi and ubi kayu in her house, and Lintago said, "When these are finished I will go and get some more, for there are plenty there." Now Andarian heard about all this and he thought, "Perhaps Lintago will kill the Belukun; I will go and see to-morrow." The next day Andarian started off, carrying only a small bareit, and going straight towards the Belukun's house he called to him from a distance. After a long time the Belukun answered him, for he was very ill from Lintago's treatment of the day before. "Why did you not answer at first?" asked Andarian. "I am very ill," replied the Belukun, "because Lintago struck me so hard yesterday. Why did you tell her about me?" "I did not want to tell her," said Andarian, "but she kept on asking me from where I had got rice, and at last she threatened to kill me, and then, being afraid, I told her." "Why did you not bring a basong to-day?" said the Belukun. "Because I have not yet finished what you gave me before," said Andarian. "Then," said the Belukun, "I am your brother and though you have not brought a basong still I will give you something. Take this little sumpitan."² "I only came to see if you were ill," said Andarian, "and I do not want a gift." But the Belukun gave him the sumpitan saying, "Whatever you aim at with this you will hit; if your house is old, blow through this sumpitan and it will become new, and if you wish for buffaloes or pigs or hens blow into the sumpitan and they will appear; only do not show it to anyone. For I am not really a Belukun but the god of your kampong (Kenharingan Tumanah) and I have a great liking for you." So Andarian promised he would not show the sumpitan to anyone, and went home, and when he got to his house he hid it. The next morning Lintago went off again to look for the Belukun, taking her basong with her as before. She was not long in getting to the place, but when still a little way off she started calling, "Belukun, Belukun." But the Belukun would not answer, and she could not find

¹ Ubi kayu = yams.

² Blow-pipe.

the tree he lived in. Then she began shouting that if he did not answer her she would eat him when she caught him. So the Belukun thinking that if he did not answer he would be killed, came out and Lintago immediately put her basket below him and struck him with her hand, but only a few potatoes and kaladi came from him. Then she took a small stick and started beating him, but nothing more came out. At last she got in a rage and began to beat him very hard, but still without result. "Why, what's the matter with the beast?" said she, and looking up the Belukun's anus she saw his heart beating inside his body. "Oh," said she, "here is a kaladi which has not yet come out," and plunging her hand into the Belukun's body she seized his heart. Then the Belukun, being in great pain, began to climb up the tree to get away, and his anus having closed on Lintago's wrist she was drawn up the tree after him. "Stop, stop," yelled Lintago, "I have let go of the kaladi inside you." But the Belukun climbed to the very top of the tree, and then releasing Lintago's hand she fell to the ground and was killed. "That's a bad woman," said the Belukun; "that was my heart she had caught hold of, not a potato."

THE KERBAU AND THE PISANG (BANANA TREE).

Illanun legend told by Orang Kaya Hadji Arsaf of Fort Alfred, Tempassuk District.

A herd of kerbaus¹ wished one day to cross a river but were afraid to do so as there were many small calves in the herd and the river was both swift and deep. As they were debating how they were to cross, some banana trees which were growing near spoke and said, "Cut us down and then you can make a raft from us for your children to cross the river on." So the kerbaus cut down the banana trees and making a raft set the calves upon it. But when the raft got out into the river the force of the stream seized it and carried it down the river to its mouth, where meeting with great waves the raft was dashed to pieces and all the young buffaloes were drowned. Then the kerbaus, being very angry, attacked the remaining banana trees with their horns until none were left standing; and that is the reason why till the present day buffaloes like to knock down banana trees with their horns.

THE ORANG UTAN.

A legend of Kampong Kiou at the foot of Kinabalu. Told by Yompo.

Long ago some men went into the jungle carrying sumpitans and when they got near to the River Tenokop they heard someone singing pantuns² among the trees. Then they looked and saw an Orang Utan (Kagu) sitting on the ground singing, and this was his song: "First of all I lived at the River Makadou, but I went to the River Serinsin; from there I went to the River Wariu; from the Wariu to the Penataran; from the Penataran to the Kilambun; from the Kilam-

¹ Buffaloes.

² A kind of poetry.

bun to the Obang, and from the Obang to the Tenokop. I cannot go up into the trees again for I am old and must die upon the ground. I can no longer get fresh young leaves to eat from the trees; I have to eat young grass." Then the men who had been listening said to one another, "This Kagu is clever at pantuns, let us shoot him with our blow-pipes." One man was about to shoot when the Kagu saw him and said, "Do not shoot me but make me a hut and let me live here till I die. When you have made me my hut, bring your sisters here and I will teach them magic, for I am skilled in it." So the men made him a hut and they brought their sisters to him and the Kagu instructed them how each sickness had its own magical ceremony (*menghadji*). He taught them the spells for snake bite and fever, and for the bite of the centipede. Then the men went home, about three days' journey, to get rice for the Kagu, but when they came back with the rice the Kagu was dead; and from that day whenever there was sickness in Kampong Kiou they called the women who had been instructed by the Kagu, and those who were ill recovered and if a man was wounded and was *menghadji*ed by the women no blood came from the wound.

THE MONKEYS.

Told by Sirinan, a Dusun of K. Piasau, Tempassuk District.

The monkeys were once men. The people who became monkeys were dyeing clothes and while they were working they were struck by hail and became monkeys. Their hands became black from the dye, and so they remain till the present day, and the movements of monkeys' hands still resemble the motion of those of people dipping the cloth in the dye (*i.e.*, the sort of patting motion often made by monkeys with their two hands).

THE SINGKALAKI AND HIS SLAVES.

Dusun legend told by Ransab Orang Tua of K. Piasau, Tempassuk District.

The Singkalaki once wished to set out on a voyage, so he called to his wife, "Baing," said he, "I am going on a voyage, so you must prepare rice for me." When all was ready the Singkalaki took the buffalo fence from below his house and when he had made a raft from it he loaded his rice and other baggage upon it. So he sailed away and after a time he came to an island. There he found a Takang, and taking him on board he bound him to the raft. Sailing away again he came to another island where he found a toad (*Buangkut*) and this too he bound to the raft before he left. At length he came to a third island and from there he brought away a Padtong. On another island he found a Korutok¹ and this also

¹ All these four animals are species of frogs or toads.

he loaded on his prahu, and his rice being finished, he then sailed home. When he came to his house he called to his wife, "Baing," said he, "you can carry the four slaves I have got from my prahu." So his wife brought the four slaves to the house. When night came the Padtong began to cry "Tong, tong." Then the Singkalaki called to his wife, "Baing, this slave of mine wants to hang (*gan-tong*¹) me; you had better tell him to run off." Next the Korutok started to cry "Tok, tok." "Ah," said the Singkalaki to his wife, "this slave wants to chop me (*Dusun, totok, to cut*), you had better throw him out." "Buangkut-kut, buangkut," said the toad, and the Singkalaki called again to his wife, "Baing, this slave too has been plotting with the others and wants to bury me (*Dusun, memukut, to dig*), throw him out too." But the Takang did not make a sound and the Singkalaki said, "This slave has not been plotting," so when he went to the kabun he took the Takang with him and gave him a parang, but the Takang, not being a man, did nothing with it. Then the Singkalaki said to his wife, "This Takang is new to the work; don't force him, and perhaps to-morrow or the next day he will have learned." So he brought the Takang back to the house and the next day again took him to the kabun and gave him a parang, while he himself and his wife went to work. When they stopped working they went to look at the Takang and finding he had not done any work, the wife said, "Why has he not done any work?" "Oh," said the Singkalaki, "he is new to it and besides he is grieving for his relations." Then the Singkalaki took the Takang and tied him up outside the sulap, giving him a parang so that he might learn to work. After a time it began to rain hard and the Takang started crying "Kang, kang." "Ah," said the Singkalaki, "this is very bad, for he wants to use me as a horse and place reins (*kakang*) in my mouth." Then the Singkalaki threw out the Takang also and thus had no slaves left.

THE PUKOU.

Dusun legend told by Serundai, Orang Tua of K. Kalisas, Tempassuk District.

The Pukou is like a pig in appearance and has a very sharp tongue. If a man is pursued by Pukous, he is safe if he crosses a river. The Pukous eat the bark at the tops of trees and if they want to feed, mount up on one another's backs till the top of the tree is reached and the top Pukou licks the bark off the tree. If the Pukous meet a man they stop, and the man stops; and when the man runs away the Pukous hunt him. Should he climb a tree the Pukous mount up on one another's backs until they have caught him and the top Pukou licks off the flesh from the man's bones. If the man crosses a river the Pukous follow him, but when they get to the opposite bank they stop to lick themselves like dogs and their tongues lick up all their skin and flesh until only bones remain.

¹ Dusun, *gantong*=hang.

THE MENGKAHALOB.

(Tuaran Dusun version of the Eclipse of the Moon.)¹ Told by
Omboi, a Tuaran Dusun.

The Mengkahalob says to its mother, "I've not had enough to eat, I want two jars more." When he has finished the two jars he asks for another. Then his mother says, "What, are you not full yet?" and the Mengkahalob answers "No." "Well," says his mother, "if you are not satisfied yet go and eat the moon." So the Mengkahalob goes and swallows the moon and the Dusun seeing the moon in his mouth beat gongs and drums until he puts it out again.

WILD PIG.

A legend of K. Lubah told by Sirinan of K. Piasau, Tempassuk District.

A long time ago a man made a kabun and planted it with "ubi kayu" and "kaladi." After a while, when the crop was ready, many wild pigs came and broke into the kabun. Then said the man, "I shall get no food if the wild pigs always come and eat my kaladi." So he made a blatek² in his kabun and when he had set it he went home. The next morning he went to the trap and found that no pig had been in his kabun that night. "Why is this," said he, "that when I have made a trap the pig no longer enter my kabun?" After another three or four days he again went to the trap and he found that a wild pig had been struck by it, but that the head of the bamboo spear had broken off in the wound and the pig had got away. The man followed the track of the pig's blood into the jungle and for four or five days he hunted on its trail, but even then he did not find the dead pig. At last the trail of blood stopped but he still followed the footmarks, which appeared fresh. When he had been on its track for a whole month he at length came to a river with a bathing-place. The man stopped and bathed, but he saw no one on the banks or in the river. Then when he had finished, finding many tracks of men on the bank, he went in search of their houses, for he had lost the track of the pig at the river. For a whole day he sought for them but could not find them, but on the second day he was startled to come suddenly on a kampong where there were many people. The people of the kampong came to meet him and asked him whence he had come; but the man did not answer. "I have never seen you before," said one of the people of the kampong, "and besides strangers never come here. Never since I can remember have I seen a stranger here, for our village is a month's journey from any other." Then the man from Lubah answered, "This is the reason why I have come. I made a kaladi garden and wild pig were always breaking into it. Because of this I made a blatek and I came here hunting for the tracks of a wild pig which was wounded by it." Said a man of the kampong,

¹ See p. 433 *ante*.

² Spring trap with spear.

"You can come to my house. There are only a few of us here for many have sailed away to trade, but one man who became sick has returned as he was of no use in the prahu." "What is his illness?" said the man from Lubah, "and how long has he been ill?" "He has been ill for more than a month," replied the other, "but he only came back two days ago. We have all tried our medicines and he does not recover, but if you are skilful give us your help." "Where is his illness?" said the man from Lubah. "Below his arm," answered the man of the kampong. So the stranger went to see the sick man and opening his coat saw the sharp part of his spring trap spear sticking in the man's body. Then the man of the kampong promised the stranger a reward if he could heal his companion, and the latter said that he would do his best. So he drew out the spearhead from the man's body and put medicine on the wound, and in two or three days the man recovered and gave the man from Lubah much goods in payment. Thus the man from Lubah knew that the men of this kampong were able to change themselves into wild pigs; and to the present day if many wild pigs come to Lubah, they consider that they are not really pigs but men in the shape of pigs, who have come from some far away kampong to plunder them.

THE LEGEND OF AKI GAHUK, THE FATHER OF THE CROCODILES.

Dusun story told by Sirinan of K. Piasau, Tempassuk District.

Long ago Aki¹ Gahuk was chief of Kampong Tengkurus. He was a very old man and he had seven sons and four daughters. His sons all wished to take wives, and his daughters, husbands, and so they married. At last Aki Gahuk became so old that he could no longer walk, and his children did not wish to provide for him. Then Aki Gahuk said to them, "Why do you not wish to support me, for I am an old man and can no longer get my living?" But his children answered that they wished he were dead, as he was only an encumbrance to them. So Aki Gahuk wept and said, "If you wish me dead you had better put me into the river, for although you give me food, you give me no clothes and I am naked and ashamed." Then his children put him into the river, for they did not wish to buy clothes for him; and Aki Gahuk stopped there in the water, and every night and morning they gave him food. There was a large stone in the middle of the stream and when he was cold Aki Gahuk used to climb slowly up on to this and sit there like a toad. Now after he had been in the water for three or four months, Aki Gahuk no longer climbed the big stone and his feet and legs as far as his knees became like those of a crocodile. His children who brought him food saw that his feet had become like a crocodile's and said, "Father, we thought you would die but you are becoming a crocodile." Then all the brothers and sisters came together to look at their father and said to him, "Father, if you are not going to die, let us take you home again to the house and give you clothes, for we do not wish you to become a crocodile."

¹ Aki=ancestor, grandfather (*cf.* Abi of the Hebrew), etc.

But Aki Gahuk said, "How can I go home with you, for I have become a crocodile. Before, you had no pity on me and now that you have pity on me I am unable to go home." So his children wept and said that they did not wish him to turn into a crocodile and Aki Gahuk said to them, "You can tell this story to your descendants; perhaps also it is good that I should become a crocodile. On feast days you can call to me, and when there is a flood I will take you across the river on my back." After some days his whole body became like that of a crocodile and his children were afraid that he would eat men, but he could still speak and he told them that he would never eat men though perhaps his descendants might do so. Then after a year Aki Gahuk called to his children and told them that he wished to go seawards, saying that if his children went in that direction they were to call him, "For," said he, "I wish to take a wife." Said his children, "How will you take a wife for there are no other crocodiles?" "I will call one to me," said their father, "I will call the Pang (iguana) and she will become my wife." Then Aki Gahuk went seawards and the Pang became his wife and from their offspring arose all the crocodiles.

DUSUN SIGNS FOR AVERTING SICKNESS.

The story of how these work is told by Yompo of Kampong Kiou near Kinabalu.

These signs are set up in time of sickness. Sickness spirits see the signs and meet the spirits which have been called into the spear and figures by the menghadji.¹ When the spirits of the small-pox are journeying in the countries in companies they come to one of these signs and the spirits of the spear (andus) call to them, "The men of this kampong set us here to dispute (bichara) with you, the men here are our men and you cannot come here." So it is settled that the spirits of small-pox shall not enter the kampong, but they ask the nantus² of the spear to point out a kampong to which they can go, saying, "If you will show us the way to another kampong we will not enter this one." So some of the nantu andus³ go with the spirits of small-pox. When they meet with another kampong it is dark to their sight though it is really daylight; for the people of the kampong have set spear spirits there also and have made it dark with their magical ceremonies. Then the nantus of small-pox menghadji⁴ and when they have finished and it has become light again, the small-pox spirits find that they have passed the kampong while they have been walking along performing these rites. [There are nantus of the spear at all the kampongs, but they do not follow the small-pox spirits like those of the first kampong.] When the small-pox spirits come to the third kampong it is dark there also, and the same thing happens again. Then the spirits of small-pox say to the

¹ Religious ceremony.

² Spear spirits.

³ Spirits.

⁴ Perform a magical ceremony.

nantus of the spear, who came with them from the first kampong. "If we cannot get into another kampong we will go back and get into yours." When they are between the third and fourth kampong it is still dark, and they wait there for five or six days and nights to see if it will become light. Then the nantus of small-pox say to the spear nantus, "If we do not get into this kampong we will go back to yours." "Very well," say the nantus of the spear, "we will go with you into this kampong, for we do not wish you to go back to ours." So the leaders of the small-pox spirits and of the spear spirits confer together, and one of the small-pox spirits says, "I will not go back, for we swore not to." Now the road to both the third and fourth kampongs being dark they try to make their way into the latter, but coming upon a very large rock near the kampong they cannot fly over it because it is dark and they cannot see. Then one spirit of small-pox finds a narrow path to the back of the village and follows it with the others behind him, and when they have walked a little they look back and find that it has become light, and they can see the kampong clearly, because there is no spear at the back of the kampong but only facing the road by which the small-pox comes. In the village they see many men, women, and children, and the elders of the small-pox and spear spirits agreeing that it would be good to go into the kampong and not go back, they enter the village, and going into a long house they see many women spinning, but the small-pox chooses only those who are beautiful for his sickness, those who are ugly he does not wish for. Then says the leader of the spear spirits, "I have shown you the way into a kampong, and we will now go home, where next you go is your own affair." So the spear nantus go home; but they become like brothers with the spirits of small-pox and say to them, "When you have finished here you can come to our kampong also." So when they leave the kampong the spirits of small-pox go to another, but they fight with the spear spirits of that village, for they no longer have spear spirits as their guides, and some small-pox spirits are killed and some of the spirits of the spear. After more kampongs, only a few of the spirits of small-pox enter, for many of them have died in the fights with the spear spirits; and at last there are so few spirits left that they no longer dare to attack a kampong.

THE HALF MEN.

Dusun story told by the headman of K. Tambahilik, Tempassuk District.

Once a woman gave birth to a boy child but one half of it was wanting; it had only one arm, one leg, and half a body and half a head. The child grew up and his tongue and his deeds were equally evil. If a woman were spinning he would get a parang and slash her loom and cloth; and the women of the kampong used to say to him, "You are like a beast, and besides you are only half a man." Then he would be ashamed and think whence he could get his other half. So at last he set out in search of it. All the men knew him in the country, and when he came to a kampong they would say, "Where are you going?" And he would answer, "I am going in search of my other half." Long he journeyed, and at last he came to a

susendatan, a place where people get water from the river, and there he bathed. As soon as he had finished he set out for the kampong, and soon saw the houses. When he got there, a man asked him what he was doing, and he replied he was looking for his other half. "There is another half man here," said the man of the kampong. Now the half man who was travelling in search of his other half was looking for his right-hand side, and the man in the kampong was without his left-hand side. So the half man who was a stranger asked how they could become one man, and somebody said, "You must wrestle together and then you will become one man." So they wrestled together for a long time, and at last they became one man. Then the "whole man" asked how he was to go home, "For," said he, "I do not know the way." "Why, it is not troublesome for you to go home," said a villager, "your kampong is quite close"; and the "whole man" looking saw his kampong not far off. So he went back, and his father and mother asked him whence he had got his other half, and he said, "I got it from a kampong far away; perhaps it is Kenharingan's kampong." Then his father and mother were very glad that their son had found his other half.

RAKIAN.

Dusun legend told by Sirinan of Kampong Piasau, but it is an up-country Dusun tale which is known to the people of Kiou.

Once there was a mangis tree in which there were large bees' nests, and when there was sufficient honey in the nests a man named Rakian went to the tree and began to drive bamboo pegs into it so that he could climb up. It was getting towards evening when he began to work. Now there were many bees' nests in the tree and Rakian, seeing that the bees of the nest right at the top of the tree were white, decided to take it; "For," thought he, "I have never yet seen white bees." Then he climbed up the steps he had made in the tree to take the bees' nest and when he was close he drew his parang to cut it down. But the bees did not swarm out from the nest and while he was sawing away at the branch from which it hung he heard the bees say "That hurts." Then Rakian, wondering, sheathed his parang and the bees said to him, "If you wish to take the nest take it gently and do not cut it down." So he took the nest with the bees in it and putting it into his bareit he descended the tree and went home. When he came to his house he put the bareit with the bees in it into his room. Early the next morning Rakian went to his kabun and did not return until near dark when, on coming back to his house, he found rice and fish ready cooked on his (paha) shelf above the fire. "Then," thought Rakian, "who can have cooked for me for I am the only man who lives in this house: this fish is not mine though the rice is. The rice is cold and must have been cooked for a long time. Perhaps somebody has come here and cooked and taken away my bees' nest." So he went to his bareit and found the bees' nest still there. Then Rakian sat down to eat. "Well," he thought, "if someone is going to cook for me, so much the better." In the morning he ate the remains of

the rice from the day before, and again went to his kabun. As on the previous day he came home before nightfall and again there was food prepared for him. "Who is this," thought Rakian, "who comes to my house and cooks?" and once more he went to see if his bees' nest had been stolen; and thus it happened that there was always food ready for him when he came home. One day he determined to return early and see who was cooking his food for him. So early in the morning he set out as if for his kabun, but when he had gone a little way he went straight home again and hid himself near the house. For a long time he waited and nothing happened, but at last the door of his house creaked and a beautiful woman came out of his room and taking his bamboo water vessel went out of the house to the river to get water. Then when she had gone down to the river Rakian entered his room without the woman seeing him and went to look at his bees. But when he opened his bareit he found that there were no bees in it, but only the nest. So he took the nest from the bareit and hid it and concealed himself in the house. After a time the woman came back from the river and went to the bareit to look for the bees' nest. "Oh," said she, "who has taken my box (sarong=sheath)?" So she hunted for the nest and at last began to weep, saying, "Who can have taken it? It cannot be Rakian for he has gone to work at his kabun. I am afraid that he will come back and find me." When it was nearly dark Rakian came out from his hiding-place as if he had just come back from his kabun; but the woman sat there without speaking. "Why are you here?" said Rakian, "perhaps you want to steal my bees." "I do not know anything about your bees," said the woman. So he went to the bareit to look for his bees but of course they were not there for Rakian himself had hidden the nest. "Oh," said he, "my bees' nest is not here, perhaps you have taken it." "How should I know anything about your bees' nest," said she. "Well, it does not matter," said Rakian, "will you cook for me, for I am very hungry?" "I do not want to cook," said the woman, "for I am vexed." So Rakian kept on telling her to cook for him, but the woman refused and at last she said, "Where is my sarong?" "I have not taken it," said Rakian. "I believe you have hidden it," said the woman, "and all my clothes and goods are in it." At last Rakian said, "I will not give it to you for I am afraid you will get into it again." "I will not get into it," said the woman; "if you like you can take me for your wife. My mother wished to give me to you in this way because you have no wife here and I have no husband either in my country." Then Rakian took the bees' nest and gave it to the woman. "What is it?" said he. "It is my kawal,"¹ replied the woman. "But," said she, "if you take me as your wife do not ever call me a bee woman, for if you do I shall be much ashamed." So they married and had a child. Now one day there was a feast at a neighbouring house and Rakian went to eat there. "Where is your wife from?" said a man at the feast, "for we have never seen such a beautiful woman before." "She is from this kampong," replied Rakian. When all the men had become drunk they still kept asking him whence he had got his wife, and saying that they had never

¹ Meaning unknown to Sirinan.

before seen such a beautiful woman. At last Rakian, who had up to that time always replied that he had taken his wife from the kampong, became drunk also. Then he forgot his promise and said, "The truth is that my wife was at first a bee." So the men stopped questioning him and Rakian went home. When he got to the house his wife would not speak to him. "Why will you not speak?" said Rakian. "What did I tell you long ago?" said she. "I think you have been saying things to make me ashamed." "I have not said anything," replied Rakian. "You are lying," said his wife, "for though the house is far off I heard. When men asked whence I came, at first you would not tell them, but when you became drunk, then you told them everything." Then Rakian in his turn became silent. "I will go home," said she, "for you have made me ashamed; but the child I will leave with you. In seven days my father will pass to the ulu¹ of this place on his way home to his country and I will go with him." So Rakian wept. At the end of seven days Rakian saw a white bee flying to the ulu of his house, and his wife came down the steps from his house and saying, "There is my father," she became a bee again and flew off after the other. Then Rakian rushed into the house and seized the child, for it was in his heart to follow his wife and her father, "For," said he, "if my wife is not here the child will die because it is still little." So he hunted for the bees until he saw them going in front of him in the jungle. At the end of seven days he had lost sight of them and still he had not come to any kampong. On the eighth day he came to a bathing-place at a river. Then both he and the child, being hungry and weary, lay down by the side of the river and slept. At last a woman came from the kampong and woke Rakian and said, "Rakian, why don't you go to your wife's house instead of sleeping here with your child, for the house is not far off?" "When I have bathed," said Rakian, "you must show me the way," and the woman replied, "Very well." So Rakian bathed and then he followed the woman and it was not long before they came to a kampong. "That is her house," said his guide, pointing to a long-house, "but her room is right in the middle of it. There are eleven rooms in the house and if you enter it you must not be afraid, for the roof beams are full of bees, but they do not attack men." So Rakian climbed up into the house and found it full of bees, both large and small, but in the middle room there were none. Men in the house there were none, only bees. Then the child began to cry and Rakian sat down. "Otun,"² said a voice in the middle room, "Why do you not come out? Have you no pity on your child who is weeping here?" Then after a time Rakian's wife appeared in the room and the child ran to her at once, and Rakian's heart became light; but his wife said to him, "What did I tell you at first that you were not to tell whence I came? If you had not been able to follow me here, certainly there would have been distress for you." When she had finished speaking all the bees dropped down from the roof beams to the floor and became men. As for Rakian and his child they stayed in the kampong and did not go back any more.

¹ Up stream.² An expression of endearment.

THE ORIGIN OF A DUSUN CUSTOM.

Told by Sirinan of K. Piasau, Tempassuk District.

Once there was a woman who had newly given birth to a child. The house she lived in was a large one, ten doors long. One day the women of the other rooms were dyeing cloth with "toun"¹ and the men of the house were away hunting, some in one place, some in another. About mid-day it began to rain and with the rain came much thunder and lightning. While it was still thundering the woman who had newly given birth menghadjied in the house and while she was performing the menghadji she saw a woman chasing a boy outside on the ground below, and their appearance was as if they had been quarrelling, for the boy was weeping and the woman kept snatching up sticks to throw at him. But she did not manage to hit him, and she kept calling out, "Stop, stop, for the people here do not know the custom." So the woman who was in the house stopped her menghadji and going to the door called out, "Why are you treating your boy like that?" The other woman stopped and said, "I am treating him like this because you people do not know the custom." "What sort of custom?" said the first woman, and while she still spoke the thunder stopped and the boy also stopped running away. The woman outside answered her, "In this you do not know the custom and that is why my son is fighting me. It is because you women are dyeing cloth when your husbands have gone to hunt, and it would be good if they your husbands were all together in one place in the jungle. See when they come back, some will bring white, some red, and some yellow; these women are dyeing their cloth *black*." Then the women of the house said, "We did not know of any custom like this. What is it?" The woman answered them, "This is the custom: when you wish to dye cloth (black or blue) you must not take hold of anything white, red, or yellow." Said the women of the house, "Instruct us in this custom." And the woman outside said, "You must keep this custom and it would be good if men did not get hit by things thrown by my son.² If the things he throws about only hit a coconut tree it does not matter, but if they hit a man there will be trouble for that man. Another time your husbands must not be seeking for things to eat, red, white, or yellow, when you are dyeing your cloth black. And do not bring these colours into the house while you are still dyeing cloth." Then the woman and the boy vanished. After a time came the men who had been hunting; four had got a deer³ and the other six had brought turmeric and the young white shoots of the Beluno-tree. When the women saw the men coming they called out, "Whatever you have brought from the jungle, do not bring it into the house this night." So the men slept outside with the goods they had brought from the jungle. On the morrow they brought their deer and other things into the house and the women of the house told them how the woman had chased the

¹ A kind of indigo.² Red blood.³ Thunderbolts.

boy. And to the present day women may not touch red, yellow, or white when they are dyeing cloth. [I think that the boy who was being chased by his mother was the Spirit of Thunder. (Sirinan.)]

NOTE.—The colours mentioned would appear to be symbolical of a thunder-storm :—

| | | |
|-----------------------|--------|----------------|
| Black or dark blue... | ... | the clouds. |
| White | ... .. | the rain. |
| Yellow and red | ... .. | the lightning. |

LOMARING AND THE SPARROWS.

Dusun legend told by Sirinan of K. Piasau, Tempassuk District.

Once a man named Lomaring lived with his father and mother and he had much padi, because he worked hard in his kabun. His mother wished to get a wife for him but in the whole kampong she could find no one suitable. Then Lomaring said to his mother, "If I cannot find a wife here we must search in other kampongs." So they sought in other kampongs near but still could find no one suitable and at last Lomaring said to his mother, "Mother, if you cannot get a wife for me near by, you would do well not to search any more, for it is tiring work." So the three, Lomaring, his father and mother, went back to work in their kabun until their padi was in ear, but before the padi became ripe it was all eaten by sparrows.¹ Their padi only was eaten, other men's did not suffer. The next year they again made a kabun and again the sparrows came and ate their padi. Then said Lomaring, "What are we to do, there is plenty of ripe padi but the sparrows only eat ours, which is still green?" When the third year came Lomaring said, "We will try once more, but if we fail and the sparrows eat our padi, I will stay no longer in this kampong." Again when it was near harvest the same thing happened and all their padi was eaten by the sparrows. So Lomaring said to his mother, "I will go and find the sparrows' kampong, for I am very angry." Then said his father, "You are but young, yet I who am old have never yet heard of a sparrows' kampong." "Never mind," said Lomaring, "if I have to search for five years, still I will find it." So Lomaring told his mother to make him seven pairs of trousers and seven coats, and his mother said to him, "Do not work any more in the kabun, for it is useless." Said Lomaring, "After seven days I will set out and I will teach the sparrows to rob us of our padi." "What will you eat on the journey?" said his mother, and Lomaring told her to make him some cakes.

At the end of seven days Lomaring set out and wherever he went he thought about the sparrows and followed them wherever they flew. After twenty days he saw no more sparrows, but still he walked on and for two or three months he journeyed thus. At the end of this time he came to a kampong, and going to it he

¹ Burong pipit.

climbed up into a long house of twenty doors, but there was no one there. One room in the middle of the house was very beautiful; its steps were of iron and its ceiling of looking-glass while the posts were also of iron. Lomaring sat down there and waited, and after a time a chelapa¹ appeared before him, but he still saw no one. Then Lomaring said to himself, "How can I eat pinang when there is nobody here? If anyone comes they will accuse me of stealing." Now Lomaring had come to the house after mid-day, and when he had been there a short time he was astonished to see a very little rice appear before him and water in a very small golden kettle, but he did not dare to eat since there was no one there. After a long time an old woman appeared in the room and said to him, "Why do you not eat, for I see that you are hungry?" "How should I eat," said Lomaring, "when there was no one in the house; people would say that I was stealing." So saying he began to eat and though there was very little rice, when he had eaten and drunk his fill some still remained, nor was the golden kettle empty. Having finished he took betel nut and began to ask the old woman where all the people of the kampong had gone and where their kabuns were, "For," said he, "although there is plenty of padi in the house I see no traces of old kabuns." When it was nearly dark many men and women came home, some carrying sacks, some basongs and others bayongs, all full of padi, and after a time came the children of the old woman bringing padi with them also. Now one of her daughters was very beautiful. Then said the mother of the girl to Lomaring, "We have no trouble about making kabuns, for wherever there is padi we also must have a share of it. It is no use concealing it. See how many years you have worked in your kabun and have not got any padi, for it is your padi that my children are bringing home in their baskets. I saw how your mother was searching for a wife for you, and that is why my people, when they had become sparrows, stole your padi, for I wished you to marry my daughter. All the men in this village wish to marry her, but I can find nobody who is suitable." Then Lomaring was pleased, but he said, "How do you become sparrows?" "Oh," said the old woman, "there is a spring here and when my people wish to get padi they go one by one into the spring and at once become birds; and when they come home with the padi they again go into the spring and become men." So it was agreed that Lomaring should marry the girl, and he took her for his wife. Then said Lomaring to his mother-in-law, "I wish to go back to my kampong to see my father and mother, and my wife shall come with me, but I shall stop there two or three years." So Lomaring went home with his wife, and his father and mother were rejoiced to see him. They asked him whence he had got his wife; but Lomaring said, "From another kampong," and did not mention anything about the sparrows. That year they made a kabun and not a single grain of their padi was taken by sparrows.

¹ Betel nut box.

THE THREE RAJAHS.

Dusun tale told by Gergoi of Kampong Nabah.

Long ago there were no men in this country of the Tempassuk; men's first place was at Naragang Nonok, up country. In this village there were many Nonok trees and men lived in them. When the kampong was over full they called a council and they agreed to divide the country between them. So three men with their wives and children and followers set out at different times from the kampong. The first man who started at length came to a place where there was a threefold fork in the road; he kept straight on and set a mark on the road by which he had travelled. The second man chose the road to the left hand, and the third took that to the right. So the companions of the first man followed him along the straight road and at last they made a village. The parties of the second and third men, who had gone to the left and right, also made kampongs. Seven days after the first man had made his kampong a white stag came to the place. The men of the kampong agreed to try and catch the stag, but it always escaped them, although it did not go far away from the village. Now the name of the man who followed the straight road was the Rajah Kapitan and he had seven wives, and he said to them, "I cannot catch this stag; you had better make me some cakes of banana and flour" (linobok). Then the Rajah, taking with him seven cooks to carry his food and baggage, got on his horse and set out to hunt the stag. So he hunted, and at night the Rajah and the stag both stopped. The next morning, early, as soon as the Rajah had eaten, he again started off after the stag and for three days he chased it, but at last he lost it. Then the Rajah, finding that he did not know where he was, agreed with his men to push on till they should come to some kampong, if there was one. At last they came to a kampong and the Rajah said, "Why, there are other people in this country; I thought that my village was the only one." Then he asked in the village whose it was, and he was told the Rajah Kretan's,¹ and that the Rajah had seven wives. "Well," said the Rajah Kapitan, "if it is true that he has seven wives, he is like me, and I will ask him for betel nut, telling him, if his wives come to me, to send those that are the most beautiful." So the Rajah's two most beautiful wives came to him, one to give him betel nut and the other to make him roko.² They were lovely, one as a star and the other as the moon. The Rajah Kretan, however, slept in his house. When the two beautiful women had waited upon the Rajah Kapitan he immediately killed them both and cutting off their heads started for home. This he did because he was angry at losing the stag. Then the Rajah Kretan awoke and when he found what had happened he caught his great dog and using it as a horse pursued the Rajah Kapitan. Now the Rajah Kapitan, who was afraid of being attacked because of the heads he had taken, when he had got home made a fort

¹ Kretan = shark.² Roko = native cigarettes.

three fathoms in height. So the Rajah Kretan came to the fort, and his dog jumped the wall. When he had got inside he asked whose kampong it was, and men answered "The Rajah Kapitan's." "How many wives has he got?" he asked, and a man answered "Seven." "If that is so," said the Rajah Kretan, "let them bring me roko and pinang." So the two most beautiful wives of the Rajah Kapitan came out to give him roko and pinang, and when he had been served he immediately cut off their heads, and leaping on his dog called out that he was now avenged on the Rajah Kapitan. The dog took the wall at a leap and in a little time the Rajah Kretan was nearly home. Now the Rajah Kretan was the second man who had started from Naragang Nonok, but the Rajah Kapitan knew nothing of the other men who had followed behind him. When the Rajah Kapitan awoke, for he had been asleep, he asked where his two favourite wives were, and he was told how they had been killed. So he started out alone on his horse to hunt the Rajah Kretan and overtook him just as he was going to enter his house. Then the Rajah Kretan seeing him, threw the heads on the ground and made off on his dog, and the Rajah Kapitan hunted him on his horse. After they had been going thus for a week, the Rajah Kretan running away, and the Rajah Kapitan pursuing him, they left the Rajah Kretan's country behind and came out upon a plain. So the Rajah Kretan dismounted from his dog and the Rajah Kapitan from his horse and the two fought, but neither conquered the other. Now while they were still fighting they came into a kampong but did not know it until they struck their backs against the posts of the houses. And the men of the kampong were astonished for they saw that the two men were strangers. Then the Rajah Bassi, who was the Rajah of the village, awoke, and coming out of the house, asked why they were fighting, and the Rajah Kapitan told him how he had hunted the stag and how being angry at losing it he had cut off the heads of the Rajah Kretan's wives. And the Rajah Kretan told him how he had avenged himself on the Rajah Kapitan, and how the latter had pursued him. Then said the Rajah Bassi, "Do not quarrel any more about your wives, for I have twenty-seven who are all beautiful and you can replace your dead wives from them. This only, I beg, do not fight in my country." So the Rajah Bassi's twenty-seven wives came out of the house, and the Rajah Kapitan and the Rajah Kretan each chose two wives like their former wives in appearance. And the Rajah Bassi said, "I have given you wives and you must fight no more; for we three men all came from Naragang Nonok, but I only know the way back. You, Rajah Kapitan, have become a Dusun, you, Rajah Kretan, have become a Mohamedan (Bajau, Brunei, etc.), while I have become a white man; and in future time if I have any trouble you must give me your help." Then the Rajah Kretan and the Rajah Kapitan thanked him and promised to help him. "For," said they, "you have become a great Rajah and we will help you; and you shall judge us and our children and shall help us in time of sickness." So the Rajah Bassi said that their answer was good and that they should help him and that he would judge their peoples and give them help. "And," said he, "you must pay me a yearly tax on each head (male) of your people." And so to the present day the Rajah Bassi (the white people) judge the

Rajah Kapitan (the Dusun), and the Rajah Kretan (the Mohamedans) and take a tax from them for each man. Further he spoke, saying, "There shall be in this pelompong¹ many people, for that is my wish." So we Dusun to the present day are descendants of the Rajah Kapitan and the Bajau of the Rajah Kretan, and as the white people are the descendants of the Rajah Bassi we obey the Government and clean the paths and do other work in which the Government asks our help. For the Rajah Bassi said, "Though you have made me great I am mortal and shall die, but I will tell this story to my grandchildren, and you, Rajah Kapitan, and you, Rajah Kretan, shall tell it to yours and they shall observe it."

THE MAGICAL PRAHU.

Story told by a Dusun of K. Tambahilik, but probably of Illanun origin.

A man named Lomaring once made a beautiful gobang,² and when he had finished it he ordered it to sail away. The gobang set sail of its own accord, and sped over the sea until it came to a rajah's bathing place on the coast, and there it waited. Soon a beautiful young woman, the rajah's daughter, came down to the pengkalan to bathe. "Whose gobang is this," said she, "which has floated away? What a nice plaything." Speaking thus she climbed on board, and immediately the boat sailed away to Lomaring, taking the woman with it. When the prahu arrived at Lomaring's pengkalan he was bathing there, waiting for it to return. "Oh," said he, "perhaps this is my prahu, which is bringing a beautiful woman." So he took the woman and brought her home to his house and made her his wife. Now another man of the same village, Tamburun by name, who was also a young bachelor, but very ugly, heard of Lomaring's luck with his prahu. "Ah," said he, "I also will make a prahu and try my fortune." So Tamburun made his prahu, and ordered it to sail away for him, but for seven days the boat refused to move. Then said Tamburun, "If I talk Dusun perhaps it does not understand, I will try Illanun." So he spoke to it in Illanun, saying, "Go and find a beautiful house," and immediately the boat sailed away, until, at last, it came to a place where a large prahu was moored, which had a dead woman on board. "Ah," said a man on the large prahu, who had caught sight of the gobang, "what luck, here is a small boat in which I can row the dead woman ashore." So he put the corpse into the gobang and immediately it rushed away with its freight to find Tamburun, and arrived at his pengkalan just as he was going to bathe. Tamburun seeing his boat with a woman on it, went and raised her up, but since the corpse could not stand, he said, "Perhaps she is fast asleep; let her rest for she must be tired." So the dead woman remained on the prahu. On the following day Tamburun went down to the boat again, and the woman's stomach being near bursting, he said, "What a wretch is this gobang of mine; it has brought

¹ Pelompong = island, *i.e.*, the country around Mt. Kinabalu.

² A kind of small boat.

me a dead woman"; and, getting angry, he broke up the boat. Then Lomaring made a beautiful basong, and when it was finished it started off of its own accord. Now there was a Bajan woman in a village who was making cakes for a festival, and the basong having come into it, stopped there. So the woman, seeing the basong, took it and placed cakes in it, until it was full to the top. Then the basong set off immediately for Lomaring's house, and when he saw it he said, "What sort of basong is this? As soon as I finish making it, it ran off, and now here it is again, full of cakes." So Lomaring and his wife ate their fill. "My prahu," said Lomaring, "got me a woman, and now my basong brings me cakes." Tamburun heard that Lomaring's basong had come home full of cakes, and he said, "I made a prahu to get me a woman, but it only got me a rotten corpse; perhaps I shall have better luck if I make a basong." Then Tamburun made a basong, but when it was finished, it would not go where it was ordered. "Perhaps," he said, "I must speak Illanun to it," so he said in Illanun, "Basong, go and get food for me," and the basong started off, and went after a herd of cattle, and as it followed close behind them, their droppings kept on falling into it. When the basong was full of dung it went into the jungle and under bushes until the top was covered with leaves, and the dung could no longer be seen. Tamburun saw the basket coming when it was still some little way from his house, and said, "I will go and help the basong for it cannot climb up into the house, since it is so full of cakes." So he went and carried the basong into the house, and plunging his arm into it to get the cakes he brought it out covered with cow dung. "What a rascal is this basong," said he, "it has brought home only filth"; and he fell upon it with his parang.

SERUNGAL

Dusun legend told by Sirinan of K. Piasau, Tempassuk District.

"Ah," said Serungal, "it is no use my stopping here, I had better go and marry a Rajah's daughter." Now Serungal was a very ugly man to look at. So he set out for the Rajah's kampong. After a time he came to a village near a river and hearing men screaming out, he went to see what it was, and saw many men killing an ant. "Why are you doing that?" said Serungal, and the men ran off and left the ant, which crawled away. When he got to the bathing-place of the village, he again heard men shouting. "Why is this?" thought Serungal, and again he went to see what it was. When he got to the place, he saw men trying to kill a fire-fly (*nenekput*¹). He spoke to them, and as before, the men ran away. At length he came to another kampong, and for the third time he heard men calling out near the river, and going towards the sound, he saw many men trying to kill a squirrel. "Do not do that," said Serungal, and the men at once ran away.

¹ Nini is Dusun for an ancestor, and the firefly is said to be a spirit of an ancestor.

After a long time, Serungal came to the Rajah's palace, and the Rajah said to him, "Serungal, whither are you going?" "Well," said he, "I will not hide my intention; I came to ask for your daughter to make her my wife." Said the Rajah to him, "You see this bayong full of rice. If you can collect it all after a man has scattered it from horseback and put it all back into the bayong until it is full, you shall have my daughter." Then thought Serungal, "How can I collect that rice, if it is scattered from horseback?" but at length he said, "I will try, for," thought he, "if I cannot collect it all I will go home, for I shall not wish to stop here any more." So the Rajah ordered a boy to take a horse and scatter the rice as the horse ran, till it was all finished; and a boy took a horse and scattered the rice in the plain, till it was all finished. "Now," said the Rajah, "I will go home and wait for you for two or three hours, but if you do not collect all the rice, you shall not have my daughter." Then Serungal started to collect the rice, but at the end of half an hour he had only got about a coconut-shell full, and he began to weep. After a time came the ant, and said to him, "Why are you crying?" "Because the Rajah will not give me his daughter," said Serungal, "unless I collect this rice, which he has had scattered, and I have only been able to find a coconut-shell full in half an hour." "Well, stop crying," said the ant, "and I will help you, for you helped me when the men wished to kill me." Then the ant called his companions, and they collected all the rice, until the bayong was full; and Serungal carried the rice home to the Rajah's house. The Rajah saw him coming from far off, and wondered; but when he arrived, the Rajah said to him, "You shall have my daughter, but you must climb my betel tree first, and get me betel nut to eat." Now the Rajah's betel tree was so high that its top was in the clouds and could not be seen. When Serungal saw the tree, he said to himself, "How shall I climb this tree, for I shall fall before I get half way up." So the Rajah went home, and Serungal began to climb the tree, but when he had got about two fathoms up it, he fell to the ground. Then he began to weep; but after a time the squirrel came and asked him why he was crying, and Serungal told him how the Rajah had ordered him to climb the tree before he should have his daughter. "Well," said the squirrel, "I will help you," and he climbed the tree, and brought Serungal the fruit until there was none left. When Serungal was still far from the house the Rajah saw him and said, "This man is greater than I, for he has got the betel nuts which so many men have tried to reach in vain." So the Rajah told Serungal that he could have one of his daughters. Now the Rajah had seven daughters, and it was the seventh and most beautiful of whom Serungal had heard. Said the Rajah, "You must go to my house, when it is dark, and the first daughter of mine you find in the sleeping room shall be your wife, and you must carry her away to another room, but you must come late at night, when it is very dark." "Ah," thought Serungal, "how shall I find his seventh daughter, for if it is dark I shall not be able to see?" That night Serungal went to the Rajah's house and waited outside till it should be dark enough, and he began to weep, because he did not know how to find the Rajah's youngest daughter. At last the firefly came and

asked him why he was crying; and Serungal told him how he had to take the first of the Rajah's daughters to whom he should come, and how he wished to get the seventh. "Never mind," said the nenekput, "I will search for you, and I will settle on the nose of the seventh daughter; so wherever you see a light, that will be the place where the Rajah's youngest daughter is." Then Serungal went into the women's sleeping room, and seeing the nenekput, carried away the woman on which it had settled to another room. In the morning, when the Rajah came to see which daughter Serungal had chosen, he found that he had taken the youngest and most beautiful. And thus the Rajah was forced to acknowledge him as his son-in-law.

GINAS AND THE RAJAH.

Dusun legend told by a man of K. Tambahilik, Tempassuk District.

A long time ago there was a man and his wife whose names were Rakian and Sumundok.¹ On the day when they married many others also had married and each couple had at least two children, but Rakian and Sumundok had none, though Sumundok was expecting a child. Rakian fell ill, and he said to his wife, "Perhaps I shall die before I see my child, but you must bring him up well, for we are not wanting in possessions." Then Rakian died and after a time Sumundok gave birth to a male child, and she said to it, "I will give you a name; your name is Ginas, but I will not bring you up, I will put you in a box." So Sumundok put the child into a box, and after two or three months she went to look at it and found that it had grown and could walk. When the child had come out of the box it spent its time in hunting the pigs and its mother did not forbid it, "For," thought she, "if it should kill a pig, I can replace it." But the people of the kampong became angry because Sumundok's child was always chasing their pigs. One day Ginas went to the Rajah's house, and for two days he hunted the pigs there below the house. Then the Rajah said to one of his men, "Go to Ginas's house and tell his relations that he must not hunt pigs any more, for I have had no sleep from it for two nights. If he does not follow my orders I will make him my slave." So three men went to Ginas's house and told him that if he chased the Rajah's pigs any more he would make him a slave. But Ginas paid no heed to the Rajah's words, and going to the Rajah's house he again hunted the pigs. Then said the Rajah, "All men follow my orders, this Ginas only, who is still small, does not obey me." So the Rajah sent to Ginas saying, "For three nights I have not been able to sleep for the noise of the waves in the sea. Go and chase them and see if you can stop them." When the Rajah's men came to the house of Ginas they said to him that the Rajah wished him to stop the waves, and Ginas said, "You must stop here to-night and eat with me." The three men stopped there, and when it was night Ginas went down to the sea-shore, and, taking sand, wrapped it in his handkerchief. Then

¹ Sumundok = virgin?

going back to the house, he woke the Rajah's men and said to them, "Give this sand to the Rajah and tell him to have a rope made from it and when the rope is made I will use it to catch the waves with." So the men went home and the Rajah asked them what Ginas had said to his order to stop the waves. Then the Rajah's men told him that Ginas had said that he would catch the waves, only that as he was short of rope he was sending some sand to the Rajah of which to make a cord, and that when the cord was made he would catch the waves with it. And the Rajah had to admit that he was beaten, and threw the sand away. Then the Rajah had seven jars of Tapai made, and killed three cattle; then he sent three men to call Ginas to drink. The three men came to Ginas and he replied that he would come on the next day. On the morrow, Ginas brought out clothes all covered with gold, and, putting them on, set out. When he got to the Rajah's house the Rajah asked him to sit down on his mattress, and all kinds of food and drink were brought to them, and there was a bowl there for washing the hands, seven punkals¹ in circumference. After they had eaten, the Rajah said to Ginas, "Ginas, you shall wash your hands on my mattress, and if the mattress is not wetted you shall replace me as Rajah, and shall have all my property and my daughter for your wife; but if you wet the mattress you shall become my slave." So when Ginas was washing out his mouth he was afraid to spit the water out on to the mattress, so he sent it into the Rajah's face instead, saying, "I was afraid to put it anywhere else, but your face does not matter, since you are blind in one eye, and thus your face is damaged. Take this looking-glass and look." So the Rajah took the glass, and, seeing that one of his eyes was damaged, and that no one else had so ugly a face, was ashamed and ran away from the country, taking with him only one of his wives. As for Ginas, he took his place and became Rajah.

TUDU.

In May, 1911, I made some small excavations on the site of a legendary Dusun kampong which is situated not far from Piladok, an Illanun village in the Tempassuk district. The following story is told about the place. The name of the old kampong is Tudu.

Long ago some men of Kampong Tudu were looking for wood to make a fence, and while they were searching they came upon what appeared to be a great tree trunk, which was lying on the ground. They began to cut it with their parangs, intending to make their fence from it, but to their surprise blood came from the cuts. So they decided to walk along to one end of the trunk and see what it was. When they came to the end they found that they had been cutting into a great snake and that the end of the "trunk" was its head. They therefore made stakes and driving them into the ground bound the snake to them and killed it. Then they flayed the skin from the body and taking it and the meat home they made a

¹ Spans.

great feast from its flesh. The skin of the snake they made into a great drum, and while they were drinking they beat the drum to try its sound, but for a long time the drum remained silent. At last, in the middle of the night, the drum began to sound of its own accord, "Duk, Duk, Kagu¹; Duk, Duk, Kagu." Then came a great hurricane and swept away all the houses in the kampong; some of them were carried away out to sea together with the people in them, others settled down at what is now Kampong Tempassuk and other places, and from them arose the present villages.

The excavations yielded sufficient evidence of former occupation of the site. Tudu is at the top of a large lalang²-covered hill, perhaps 1,000 feet in height. On the summit are two large impalum (a kind of mango) trees of great age. Having selected a probable house site, I drove two parallel trenches across it and many shells of sea molluscs were at once found as well as those of the large fresh-water snail which is so much used as an article of food at the present time. There were also many fragments of cooking pots and these were of a much thicker make than those at present in use among either Dusun or Bajau. Two pieces of light greenish porcelain of evident Chinese manufacture were also discovered and were said by the Dusun coolies to be respectively fragments of a gusi³ and a tompok,³ but this I consider doubtful, although the fragments are undoubtedly ancient. A large circular stone of syenite which has the appearance of being waterworn was also found, and the opinion of the Dusun coolies was that it was a potting stone, such as is used by the natives for smoothing the inside of pots. The most important relic, however, was a more or less circular stone, which had a chiselled depression in the centre on both sides; and these were evidently intended to give a firm grip to the fingers. Native opinion hesitated for some time as to whether or not this also was a potting stone, but eventually came round to my point of view that it was probably a hammer stone used for breaking open sea-shells. All the Dusun agreed that they had never seen anything of the sort before. Below the hill on which Tudu stood are two largish pools and at some distance from them a stagnant and winding watercourse. These two places are pointed out respectively as the spots where the snake was first wounded and where it eventually died.

LAMONGOYON.

There is an earthwork some little way above Singarun rest-house in the "Ulu Tempassuk" into which the bridle path of the interior now cuts. It consists as far as can now be seen of a ditch and mound on the hillside, the ditch being on the upper side of the mound. I have measured both of these and find them to exceed 60 feet in length. The mound has been much damaged by the

¹ Kagu is Bajau for hurricane or typhoon.

² A very wiry kind of grass.

³ Sacred jars.

construction of the bridle path but appears not to have been of any great breadth. Unfortunately I have not been able to make excavations there, but the Dusun tell the following legend concerning the spot:—

There was once long ago a very tall man named Lamongoyon. He could cross a river at a single stride and he died on top of the hill where his grave is. His people were unable to lift his body and so they rolled it down to the place where they had made his grave, and there he lies to the present day. His head points inland and his feet seawards.

PLANDOK STORIES.

THE PLANDOK AND THE GERGASI.

Bajau story told by Si Ungin of Kotabelud.

Once upon a time there were seven kinds of animals, the kerbau (buffalo), the sapi (ox), the dog, the stag, the horse, the plandok (mouse-deer), and the kijang (barking-deer, *Cervulus muntjac*). These animals agreed to catch fish and when they had cast a round net into the sea they drew it to the edge and there were many fish in it. They placed their fish on the sand, and someone said, "Who will guard our fish while we go and cast the net again, for we are afraid of the gergasi."¹ Then said the kerbau, "I will guard the fish for I am not afraid of him, if he comes here I will fight him with my horns." When the other animals had gone away the gergasi came and said, "Ha, ha, ha, what a lot of fish you have caught! I'll eat them directly, and if you don't like it I'll eat you too." Said the kerbau, "All right, come here and I'll horn you." "Very well," said the gergasi, "if you won't give me your fish I will eat you." When the gergasi had got close, and the kerbau made as if to horn him, he seized hold of its horns and the kerbau could do nothing, because the gergasi was very big and strong. Then the kerbau cried out, "Let go; if you let me go you can eat the fish." So the gergasi let him go and the kerbau swam off to his companions, who were in the sea catching fish. When he came there, he said to them, "The gergasi has eaten our fish; he caught hold of my horns and I could do nothing." Then the other animals were angry with the kerbau and said, "If we were to go on fishing till we died the gergasi would get all our fish"; and the horse said to him, "You fish with these others this time; I'll guard the fish, and if I don't manage to bite the gergasi at any rate I'll kick him." So the animals brought the fish to the same place and leaving them there in charge of the horse went again to catch more. When the other animals had been gone a good time, out came the gergasi again, and said "Ha, ha, ha, if you don't swim off again to your companions, I'll eat you as well as the fish." "Well," said the horse, "come and take them if you can, but I will guard them till I die." On the gergasi's approach the horse tried to bite him; but the gergasi caught him by the head and he could do nothing. Then the horse reared up and the gergasi let go his

¹ A mythical giant who carries a spear over his shoulders.

head. When he had got free he let fly at the gergasi with his heels but the gergasi caught him by the hind legs. So the horse begged to be let go and the gergasi let him go, and while the horse was swimming away to his companions the gergasi ate the fish. When the horse reached his companions he said, "I too have done my best, but the gergasi has got the fish. First I tried to bite him, and he caught me by the head. Then I reared and, having shaken him off, tried to kick him, but he only caught me by the legs, and I had to give in." Then his companions said, "What is the use of our catching fish, we only get tired and the gergasi eats them; it is best that we should go home." So the sapi, the stag, the dog and the kijang said, "What is the use of our trying to fight the gergasi, for we are afraid; all the strong animals have tried but they have all been beaten. Let us go home." The plandok only remained silent, and when all the others had had their say he said, "You go and catch fish again and I will stop on guard." "What can you do," said the horse, "who are so small? How can you fight the gergasi?" "Never mind," replied the plandok, "I can't fight him or kill him but I should like to guard the fish." The other animals wanted to go home, but the plandok persuaded them and they again caught many fish and these they placed on the sand in the same spot. Then said the stag, "Who is going to guard the fish?" and the kerbau replied, "Why the plandok said just now that he would." "Very well," said the plandok, "I will guard them but perhaps some other animal would prefer to, as my body is so small." But none of the other animals were willing, so the plandok said, "All right, I will guard them, but put them in a heap and cover them with leaves so that they cannot be seen." Then his companions heaped up the fish and covered them with leaves and having done so went back to the fishing. When the others had gone the plandok went and got some rattan and cut it into strips such as are used for binding anything. As soon as he had finished, out came the gergasi and said, "Ha, ha, ha, is the plandok guarding here? Why, I got the fish from the kerbau and the horse, what do you think you, who are so small, can do? You had better give me the fish or I'll eat you along with them." Then the plandok said, "I'm not guarding the fish, I'm working cutting up rattan," and the gergasi, who had come near but had not seen the fish said, "What are you doing with the rattan?" "I'm binding it round my knees," replied the plandok. "Why are you doing that?" said the gergasi. "Don't you see the sky?" said the plandok, "it looks like falling, see how low it has got; that's why I am binding up my knees." "Why do you bind up your knees if the sky looks like falling?" asked the gergasi. "I'm binding up my knees so that I can get into our well here; for, if the sky falls, I shall not get hurt when I'm down there." Then the gergasi looked at the sky and saw that it was very low. "Don't bind up your legs first," said he, "bind mine." "All right," said the plandok, "only go over to the well first." So the two went to the well, the plandok carrying the rattan. Then the gergasi said, "You bind yourself up first," but the plandok replied, "If I bind myself up first how can I bind you up afterwards." "Very well," said the gergasi, "bind me first, but you shall be the first to go into

the well." "If I do that," said the plandok, "I shall not die from the sky falling on me but from your falling on top of me in the well." So the gergasi agreed to go first as what the plandok said seemed reasonable; and the plandok bound up the gergasi firmly, tying his hands to his knees. "Why have you bound me so tightly?" said the gergasi, but the plandok only gave him a push and he fell into the well. "Ah, now you can stop there till you die," said the plandok; "you don't know the plandok's cleverness." "I suppose I shall die here," said the gergasi. "Yes," said the plandok, "for you have always stolen our fish." After a little time there came the plandok's companions, bringing more fish. "Ah, see how clever I am," said the plandok, "for I have bound the gergasi! You said the gergasi was strong. How then have I managed to tie him up?" "You lie," said the kerbau, and the horse, "How could you manage to bind him." "If you don't believe me," said the plandok, "look into that well and see if he's not there." So all the animals went to the well and saw the gergasi. Then said the horse and the kerbau, "How did you bind him?" "What's the use of your asking," said the plandok, "you don't know the plandok's cunning. However, you'd better kill him with a spear or something because he's stolen our fish so often." So they killed the gergasi with a spear. When the gergasi was dead they agreed to eat on the shore, and when they had cooked their fish and rice they found only one thing wanting, and that was pepper. So as they had no red pepper they did without it, though as they were accustomed to it they did not enjoy their food so much. Then while they were eating, the plandok saw that the end of the dog's penis was showing red, "Ah," said he, "we were seeking for red pepper just now—there is some I see." And he pointed to the dog's penis. (*Nampak itu anjing punya butu sudah keluar merah.* "Ah," di a bilang, "Kita orang mon chari lada merah tadi, sana ada lada merah, sahya nampak"—*dia tunjuk itu anjing.*) The dog did not understand and the stag and the kijang said, "Where is pepper." "There," said the plandok, and he again pointed to the dog. Then the dog became very angry because he was ashamed and the stag and the kijang had laughed at him. Then the stag, the kijang, and the plandok became frightened and ran away and the dog pursued them. And the dog always hunts these three till the present day, because they made him ashamed. The dog was hot on the track of the plandok when they entered the jungle. The plandok, however, managed by using its teeth and feet to climb a tree. The dog came below the tree but could neither see the plandok's tracks nor follow its scent beyond this spot. So the dog left following the plandok and went to hunt the stag and kijang. When he got to the place where the animals had fed he found that they had all gone but their fish and rice were left behind. Then he hunted the stag and the kijang but could not catch them. At last he said, "Well, if I ever see either the stag or the kijang or the plandok I will kill them, and my children and their descendants shall do the same." And so they do down to the present day. A little time after the dog met the horse, the kerbau and the ox and these four animals shared the food, for the dog was not angry with them, because they had not laughed at him.

THE PLANDOK AND THE TIGER.

Told by Si Ungin, a Bajau of K. Kotabelud.

When the dog had gone home the plandok went in search of the tiger, and on his way he came across a lot of snakes which were lying coiled up in circles near the tiger's house. The plandok waited there and the snakes did not move. Then came the tiger, and the tiger and the plandok saw each other at the same moment. The tiger, however, did not see the snakes, and said to the plandok, "Plandok, what are you doing here?" "Oh," said he, "I've been waiting here a long time on guard, because the Rajah has ordered me to." "What are you guarding?" said the tiger. "I am guarding the Rajah's goods here, his *oruts*,"¹ said he, pointing to the snakes. Then the tiger looked at the *oruts*, and seeing them coiled up, he said, "What if we drag them undone, then I can tie them round my waist and see if they are good ones or not." "I dare not let you do it," said the plandok, "as the Rajah has put me here to guard his goods, but if you like I will ask him." Now the plandok was frightened of the tiger and wanted to beat a retreat, so he said, "I will go ahead, and if I meet the Rajah I will call to you." Then the plandok started in search of the Rajah, and when he had got some little way off, he called to the tiger and said, "I have met the Rajah, and he says that you can try on the cloths." Then the tiger caught hold of the snakes and dragged at them, and they, waking, attacked him, winding themselves about his body and biting him. Thus the tiger died. As for the plandok he ran off, saying, "Ah, you tiger, you consider yourself strong, don't you? but you are no match for the cunning of the plandok."

THE PLANDOK AND THE BEAR.

Told by Si Ungin, a Bajau of K. Kotabelud.

When the tiger was dead the plandok began to think how he could get the best of the bear, for he had heard that the bear was also a strong animal. As he was walking along one day he came across a bees' nest in a tree, and sat down near it to wait. After he had been there for some time there came the bear. "What are you doing here?" said he. "I am guarding the Rajah's *tawag-tawag*," answered the plandok, "which he has left in my charge." "May I try its sound," said the bear, "whether it is good or not?" The plandok answered as before that he must ask the Rajah first, and when he had gone off and had got some distance away, he called out, "The Rajah says you can strike the gong." So the bear struck the nest and the bees, coming out in a fury, stung him to death.

¹ *Orut*, a long scarf-like cloth used for swathing the body and especially the stomach during war. It is said that if a man who is wearing an *orut* is stabbed in the abdomen, no intestine will project from the wound.

THE PLANDOK AND THE CROCODILE.

Told by Anggor, a Tuaran Dusun.

The plandok was walking one day near the edge of a river and he saw some fruit on a tree on the other side. He was just going to cross when he saw the crocodile. "Who is that?" said the plandok, but the crocodile did not answer. Then said the plandok, "Ah, I know who you are, you are the crocodile. In seven days' time I will bring my whole tribe to fight you, and do you also bring your people." When the seventh day had arrived, the plandok went down to the river very early, before the crocodile had come, and walked backwards and forwards until the whole of the river margin was covered with its tracks. After a time the crocodile and his companions arrived. Then the plandok, who was awaiting them, spoke and said, "You are late in coming; my followers waited and waited for you, but at last they grew tired and have gone home. If you do not believe me, look at their tracks on the bank. I should like to count how many you and your companions are, so draw yourselves up in a row from one side of the river to the other." So the crocodiles did so, and the plandok started walking on their backs counting "One, two, three," when suddenly he gave a jump and reached the other bank. Then he called out, "Ah, I have cheated you, for how else could a plandok fight with crocodiles. I saw the fruit on the other side of the river, but I was afraid to swim across as I knew you were waiting for me." "Very well," said the crocodile, "wait till you come down to the river to drink and I'll eat you." A few days afterwards the plandok, who had forgotten about the crocodile, came down to the river to drink, and the crocodile caught him by the leg. Then the plandok took hold of a piece of wood and pulled it towards him, and when he had done this he called out, "That is not my leg you have caught hold of; this is my leg," said he, pointing to the piece of wood. So the crocodile let go of the plandok's leg and the plandok sprang away, calling out, "Ah, I have cheated you again, how foolish is the crocodile!" "Very well," said the crocodile, "another time I won't let go of your foot so easily."

THE PLANDOK AND THE OMONG.

Story told by Si Ungin, a Bajau of K. Kotabelud, Tempassuk District.

When the plandok had cheated all the strong animals and had brought about their deaths, he wished to have a contest of wits with an animal who considered himself clever, so he went in search of one, and at last he met the omong,¹ and the omong said to him, "Plandok, all the strong animals have been killed by your cunning, but if you like to try your wits against mine, I am ready." "Very well,"

¹ Omong, the hermit crab.

said the plandok, "that is just for what I am looking, animals who consider themselves long-headed; but how would you like to compete with me?" "I should like to race you," said the omong, "and if you win I will acknowledge your cleverness and your power of running." "What, *you* want to race with *me*?" said the plandok, "you can only walk sideways on the sand, and you don't race with your body only for you have to carry a shell as well." So the plandok felt ashamed to run a race with the omong, but he said, "When are we to race?" "To-morrow," replied the omong, "we will meet in the middle of the sands and race. You had better call your companions and I will call mine too." "Very well," said the plandok, "I will come to-morrow." "We will make a four-sided course for the race," said the omong, "and we will race along the sides of the square from post to post." On the morrow the plandok and his companions came, and also the omong with his, and it was decided that whoever won should be considered the champion over all the animals—for the plandok had already overcome all the strongest of them. When they arrived at the open sand by the sea they made a square, placing stakes at the corners. Now the plandok collected all his followers into one place as did also the omong. The omong, however, had made a plot and chosen three of his companions like him in appearance and size, and had told them to bury themselves in the sand by three of the corners of the racecourse, but to leave the fourth corner, the starting-point, vacant. Then said the omong to the plandok, "When you get to the first post call out, 'Omong,' and if I don't answer you will know that I have been left behind and that you have won the race." So the plandok and the omong started to race from the first post, the omong saying, "Run." When the plandok heard the omong say "Run," he gave a jump and the omong, who of course was left behind, quickly buried himself in the sand, without anyone seeing him; for the spectators were some way off and the omong small. So the plandok ran without looking back, and when he got near the first post the second crab had come out of the sand and was waiting for him. When the plandok got to the post he called out, "Omong," and the crab answered, "Yes." So the plandok seeing what was apparently the same crab gave another jump and started running for the second post. The same thing happened here also, and the plandok said to himself, "How is it that the omong who walks so slowly manages to keep up with me?" At the third post the crab again answered, and the plandok, who was breathing heavily from running at top speed, set off as fast as he was able, for the original starting-post, which was also to be the finish of the race. When he got there the omong was waiting for him, and again when the plandok called out, "Omong," he was answered. Then the plandok was ashamed and wished to die, so he ran from stake to stake until his breath was exhausted, and when he reached the starting-point he called out again, "Omong," and the omong answered, "Yes." Thereupon the plandok, who had no breath at all left, fell down and died, and the omongs cried out that the omong was the champion; but the plandok's followers kept silence.

THE PLANDOK IN A HOLE.

Told by Orang Tua Ransab, a Low-Country Dusun of Kampong Piasau,
Tempassuk District.

The plandok when wandering in the jungle one day fell into a large hole in the ground and could not get out again. After a time the timbadou¹ came to the hole, and seeing the plandok, said, "Why, plandok, what are you doing there?" "Oh," said the plandok, "I've come here to see my mother and father, my sisters and brothers." "Wait a bit," said the timbadou, "and I will come down too, for I also wish to see my mother and father, sisters and brothers," but the plandok told the timbadou he was not to come down. Then the timbadou answered that if he said that again he would fall on him from above, and he, the plandok, would die. So the plandok gave the timbadou leave to get into the hole and the timbadou came down. When he was down the timbadou said to the plandok, "Where are my father and mother?" "Wait a little," said the plandok, "I've lost them just at present." So the timbadou waited and after a time the rhinoceros came to the hole and asked them what they were doing. Then the plandok answered as before that he was amusing himself, that he was seeing his father and mother and that there were lots of shops down there. Whereupon the rhinoceros came down too, "For," said he, "my father and mother are dead and I would like to meet them and see how they have come to life again." Next came the stag and asked what they were doing and the plandok replied that he was seeing his father and mother and that there were many people sailing away on voyages down there. So the stag also jumped down. After that came the kijang,² and he receiving the same answer from the plandok came down too. Then since the other animals were standing on each other's backs in the hole, the timbadou at the bottom and the kijang at the top, the plandok was able to scramble up to the top on their backs and make his escape from the place. Now when he had got out he met a man and his dog hunting, and the dog having got on his scent pursued him. Then the plandok made for the hole and running round it once or twice departed. So the dog, while following the scent of the plandok, came to the hole and seeing the timbadou and the other animals stopped there barking. Then the man came up and killed them all. As for the plandok he got off scot free.

A SLIGHTLY DIFFERENT LEGEND OF THE BEGINNING OF THE WORLD.

Told by the headman of Kampong Timpalung, a Tuaran Dusun.

At first there was a great stone in the middle of the sea. At that time there was no earth only water. The rock was large and it opened its mouth and out of it came a man and a woman. The man and the woman looked around and there

¹ Timbadou, wild cattle.

² *Cervulus muntjac*.

was only water. The woman said to the man, "How can we walk, for there is no land?" They descended from the rock and tried to walk on the surface of the water and found that they could. They returned to the rock and sat down to think; for a long time they stopped there; then again they walked upon the water and at length they arrived at the house of Bisagit (the spirit of small-pox), for Bisagit had made land though it was very far away. Now the man and his wife were Kenharingan and Munsumundok.¹ They spoke to Bisagit and asked for some of his earth and he gave it to them. So going home they pounded up the rock and mixed Bisagit's earth with it and it became land. Then Kenharingan made the Dusun and Munsumundok made the sky. Afterwards Kenharingan and Munsumundok made the sun as it was not good for men to walk about without light. "Then," said Munsumundok, "there is no light at night, let us make the moon," and they made the moon and the seven stars,² the blatek (spring trap)³ and the kukurian.³ Kenharingan and Munsumundok had one son and one daughter. Now Kenharingan's people wept because there was no food. So Kenharingan and Munsumundok killed their girl child and cut it up, and from the different portions of its body grew all things good to eat: its head gave rise to the coconut, and you can see the marks of its eyes and mouth on the coconut till this day; from its arm-bones arose sugar cane; its fingers became bananas and its blood padi. All the animals also arose from pieces of the child. When Kenharingan had made everything he said, "Who is able to cast off his skin? If anyone can do so, he shall not die." The snake alone heard and said, "I can." And for this reason, till the present day, the snake does not die unless killed by man. (The Dusun did not hear or they would also have thrown off their skins and there would have been no death.) Kenharingan washed the Dusun in the river, placing them in a basket; one man, however, fell out of the basket and floating away down the river stopped near the coast. This man gave rise to the Bajau who still live near the sea and are skilful at using boats. When Kenharingan had washed the Dusun in the river he menghadjied³ them in his house, but one man left the house before Kenharingan had menghadjied and went off into the jungle to search for something and when he came back he could not enter the house again for he had become a monkey. This man is the father of the monkeys.

POTS.

Told by a Dusun of K. Tambahilik.

A long time ago men had no cooking pots and when they wished to cook they had to use bamboos. One day a youth went out into the jungle with his dog to hunt, but the dog would not hunt and kept stopping. So the youth, wondering, went to look why the dog had stopped and saw that there was a small mound. He

¹ Chief gods of the Dusun.

² Constellations.

³ Menghadji, to perform a religious ceremony.

scratched in the mound and taking some of the earth, which was potter's earth, he took it home and told the women to make pots of it. When they had finished making the pots they found that they were useless and fell to pieces. "Ah," said the youth, "this will not do." So going back to the mound he made a large hole until he came upon sand. Then he took both sand and potter's earth and coming home again told the women to make pots. This time the pots were good and thus pots are made to the present day by mixing sand with the potter's earth.

HISTORY OF KITUI.

BY THE HON. CHARLES DUNDAS.

THE last of the Highlands of the East African Protectorate end in a tableland called the Yatta Plateau, and beyond this there is a very gradual slope which, roughly speaking, extends for some 200 miles to the coast. A great part of this huge tract of land lying between the Rivers Athi and Tana is officially known as the District of Kitui. The name as far as the whole country is concerned is not a native one, but is taken from the name of the Government station Kitui, which lies some 20 miles east of the Yatta Plateau. The station lies at an altitude of some 3,750 feet, but east of that again for a few miles there is a steep drop down to a level of about 2,000 feet, and then comes a seemingly endless plain which is the final slope down to the coast; north and south of the station the land also falls to an altitude of about 2,000 feet, though the descent is less abrupt. The greater part of this country is uninhabited, the populated area forms a comparatively narrow strip scarcely 50 miles broad, stretching north and south of the station from the Tana to the Athi River, a distance of about 160 miles; the most easterly settlements lie about 35 miles from the station, and mark the boundary of a vast stretch of bush country uninhabited except for a few Wanderobbo.

Wherever the land has not been cleared for cultivation the whole country is thickly overgrown with thorn bush, but despite the density of the bush it is exceedingly dry. Permanent running water is not found except in the Rivers Athi and Tana or "Kiloluma" as it is called by the Akamba, and in the dry season scarcity of water is often a serious problem to the natives, particularly as the water obtained by digging is often too salty for human consumption. The soil, too, is unfertile, and this coupled with the frequent failure of rains results in periodical famines. Such famines have in the past harassed the Akamba more than any other adversity, all Akamba can tell of seven famines, some of many more, and it is certain that the population has been largely held in check by these disasters.

It is probable that there have been of late a series of dry years. Many of the older inhabitants speak of times when there was running water in parts which are now waterless and uninhabited. Large river beds may be seen which are now quite dry and overgrown; some of these might scarcely be recognized as river beds but for their names, still retained by the natives. Thus the River Nziu forms a broad watercourse, but the bush and small trees in it show that it has not been

running for many years, and one may dig twenty and thirty feet in the sand without coming upon water. These facts make it probable that there was a time not so long ago when the country was more richly watered. Minerals or other natural riches have not as yet been found. The climate is unhealthy, particularly in the lower lying parts where there is much fever, and on the whole, therefore, Kitui does not so far appear to be a country suited for Europeans.

The inhabitants of this country are all Akamba excepting for the Theraka, who occupy a small district in the north on the Tana River. Of the past history of the latter people practically nothing is known, and that of the Akamba is very vague, nor does it seem to present much of interest except as a guide to the study of the people.

According to native accounts all Akamba came from Ulu in Machakos District. All those of Kitui maintain this; elsewhere it is said, I believe, that they came from Teita, but it seems more probable that the Wateita are an offshoot of the Akamba. Not so long ago, probably not more than a century ago, there was an immigration from Machakos across the Athi River into what is now called Kitui; curiously enough the Akamba of Machakos called and still name this country "Thaiishu," which is a country north of the Tana River. According to native legend they had for long tried to cross the Athi, which they say was unfordable in those days, being very narrow and running very strongly. It is not impossible that there may be some truth in this, for if the supposition of a greater rainfall at some earlier time is correct the river would naturally be deeper. That this migration, whatever its details may have been, did take place seems almost certain, for many old men state that their fathers came from Machakos, and the story is too well known to be entirely doubted, but whether it was a general migration at one time or whether it took place gradually through years is not to be ascertained. Neither can we know why it took place unless it was that the Akamba tried to escape the raiding Masai. Following upon this there seems to have been a gradual spreading of the Akamba over the whole country from around the east side of the Yatta, about five hours from the present station, where it is said that there was a large settlement of them. They now spread up to within 20 miles of the Tana, and are particularly numerous in that part which is called Mumoni. The latter place was uninhabited until about fifteen years ago, indeed, the natives assure one that very few of the older boys even have been born in Mumoni. Despite the fact that these movements cannot have been so very long ago, there are fairly distinct differences between the people of various parts. There are at least two well-defined branches which are recognized by the Akamba themselves, and are to be distinguished by the manner after which they cut the teeth. In Machakos the six front top teeth are cut to extremely fine points, in Kitui to the west of the station and in its immediate surroundings four teeth are cut to blunter V shapes, while in Mumoni and in the whole of the eastern and southern parts only the two front teeth are cut so as to leave an inverted V-shaped space; at Ikutha in the south there is a slight variation of this in that the outer

edges are also slightly cut, which gives them somewhat of a crescent shape, but in the main the practice is the same as that followed by the people of Mumoni as against those of Kitui, who more nearly approach the Akamba of Machakos in this respect. In dialect, too, there are differences, that of Kitui is most nearly related to the Machakos dialect. I am not able to say how much variation there is between the dialects of Kitui and Ikutha, but at Mumoni and in the east the difference is most marked. The latter has a distinct tendency towards the Kikuyu language, the "r" is very pronounced, a sound which the Kitui native finds most difficult to learn; names such as Nzellu become Nzerru in the north; other words are used such as "Thoba" (behind), instead of "Etina" as at Kitui (Kikuyu, "Thotha").

It thus seems likely that the Akamba settled around the foot of the Yatta, and spreading from thence took up other customs and differences of speech as they left their original country. Even those nearest to Machakos show such variations, and the Machakos Akamba appear to look down upon those of Kitui, regarding them as people almost destitute of good customs, though apparently it is not uncommon for the Kitui people to refer matters in question regarding recognized customs to elders of Machakos.

The question is now what might have brought about these variations in one and the same tribe. There is a legend among the Akamba that formerly there were two men, one called Ngoli and the other Ekulli. Neither of them had cattle or sheep, but one day Ngai (god) told them to leave their villages open that night. Ngoli did so, but Ekulli disregarded the injunction. In the night both were awakened by bellowings and bleatings and Ngoli going out of his village saw numbers of cattle, sheep and goats coming out of an anthep. All these ran into his open village but Ekulli got none because his village was closed. Thus while Ngoli became rich Ekulli remained poor. Now to this day certain people are called Ngoli and others Ekulli. The latter seem generally to be poor, though, of course, circumstances have done much to alter this now, but there appear to be two classes, of which Ngoli are more or less the Kamba aristocracy. It is further said that when the Akamba came to Kitui they found there an aboriginal race which spoke Kikamba or a dialect of this language. These people, they say, were very poor and had no cattle but subsisted largely on the honey which they collected. The name Ekulli may have been derived from the word Ikuli, a monkey, from the practice of climbing trees to collect honey. Now whither this aboriginal race has gone one cannot say, but the following may throw some light on the question, or it may only be a mere surmise. In the north live the Theraka, where they were until lately separated from the Akamba by a broad expanse of uninhabited bush country. Compared with the Akamba they are a poor people; honey collecting is largely practised among them, even more so than among the Akamba. They themselves state that they came from the other side of the Tana, but at the same time they say that they sprang from the Mkamba tribe, while their language is a strange mixture of Kikuyu and Kikamba. Nearer to the former in language and half way between

the two in customs, they are a somewhat puzzling section. If they came from the other side of the Tana it seems strange that they should claim descent from the Akamba, and that honey gathering should be such a common practice with them, which it is not among the Akikuyu. I have thought it possible that the Theraka might be representatives of the aboriginal tribe of Kitui spoken of above. Presuming that the Akamba spreading from the Yatta mixed with these people we could account for the variations of dialects, and in particular the tendency towards Kikuyu, also the Akamba might have picked up from them certain customs and dropped others of their own. Such a fusion need not be supposed to have taken place peaceably, it might and probably would have come about by warfare and force, in which the Akamba subdued and swallowed up the aboriginals or drove them northwards as they advanced. Both may have been the case, and thus a certain number may have remained with the Akamba and merged into them while others fled across the Tana River from whence they later returned to their original country as far as the Akamba would let them.

Another presumption is possible. We see here the Akamba and Akikuyu gradually merging into each other, at Mumoni there is a real convergence until in Theraka we find people who can be said to be neither the one nor the other. All around the base of Kenya and along the banks of the Tana are people such as the Waembe, the Wameru, Waambu and Suka who are apparently of Kikuyu stock, but the relationship between them and the Theraka and these and the Akamba might really mean that they all sprang from an original stock now separated into different tribes, of which the Akamba and Akikuyu are the most distinct.

So much for the people who live in Kitui District. As regards their past history there is a certain amount to be said of the Akamba since their migration into Kitui, which should be of interest.

At the Yatta settlement around Maviani hill there lived a chief called Kivoi who is said to have been the sole chief of the Akamba of that time. His authority was such that he levied taxes from some Masai who had settled in that neighbourhood. When Dr. Krapf came to Kitui in about 1850, Kivoi volunteered to take him through on a journey northwards, but on the way they were attacked and Kivoi was killed; Dr. Krapf escaped and returned, but met with a very poor welcome on account of Kivoi's death. Although Kivoi is spoken of as a chief this is probably not a correct description of his position. The Akamba do not appear to have ever had recognized chiefs, but rather leaders, who in time of war ruled supreme as did the Dictators of Rome. Naturally, however, such a man would always command considerable influence and no doubt his authority bound the people more or less together. At that time the Galla inhabited Kitui as far west as the Mutito hills. The Akamba made uninterrupted war against them and they were gradually driven back and robbed of their cattle until they seem to have retired into their own country, whither the Akamba say they would have followed them but for the Europeans. The Galla were weak in numbers but they were fierce and warlike, so that it is evident that although the Akamba outnumbered

them they must have been considerably more combined at that time than they are now. The Galla are to this day hated by the Akamba by reason of their habit of mutilating the bodies of their fallen enemies. All over their traces are to be found still, particularly in the stock of the Akamba, which is largely Galla; at Endau they are said to be entirely Galla cattle. Near Mai hill there is a large rock on top of which there is a big excavation which is said to have been made by the Galla for the purpose of storing rainwater. Besides wars with these people the Akamba of Mumoni had continual fights with the Theraka and Meru people, from whom they took much stock. How far back these dated I cannot say but those which took place since the Government was established were more in the form of raids, in which the Akamba had very much the upper hand, mainly, it must be admitted, owing to the fact that they had quite a number of Snider rifles, which were subsequently confiscated by us. Meantime, after the death of Kivoi, the Akamba seem all to have drifted apart without any leaders or chiefs and a deplorable state of affairs resulted. If they came to Kitui originally to escape the Masai they found no better luck here, for the Masai raided them continuously, robbing enormous quantities of stock. Mostly these attacks seem to have taken place at night when the unsuspecting village was surprised and the cattle driven away, often, too, the inhabitants were killed. Despite this it is certain that the raiders were frequently themselves worsted, but the Masai were always daring and, as a rule, successful. Most of them came from Kilima Mbogo and Gai, where the Mumoni natives then lived, which was a favourite ground for their attacks; it was this that drove the Akamba further north and eastwards. Thus while they were persecuted and robbed by the Masai, they in their turn fell upon the Galla and Meru people, and this may account for the legend that tells of three brothers, Galla, Masai, and Mkamba, who lived together in peace until Masai stole the cattle of Mkamba, who robbed Galla of his wives. It seems that the time of the raids was worst after Kivoi died, when the Galla only still remained in the north. Those who drove the latter completely back were the Akamba of Mumoni, who appear to have held together more than any others, as in fact they do still, and it is probable that they made a good stand against the Masai.

It is not surprising that the Masai found the Akamba an easy prey at this time, for there was not only a total lack of combination among them but uninterrupted bloodshed among themselves, so much so that the Akamba now declare that none of their enemies killed half the number that were killed among each other. I know a man in Mumoni who had six sons, four of these were killed in fights with their fellow countrymen and two died of starvation in the famine. This is by no means an isolated case, but it is rather a typical instance of what took place at that time. I asked him what had led to his sons being killed and he said, "We used to go to fight the Meru and Galla and came back with cattle, but when it came to dividing these, the people began to fight and often more died than were killed by the enemy. Other times the cattle would be fairly divided, but afterwards others claimed more and collected to rob a few. Often the Anake would be dancing and

others came and demanded one of the girls and then a fight began. In this way I lost my sons." Here at least there was some combination to begin with, but around Kitui and in the south there was nothing of the sort, every little dispute, every claim led to bloodshed and this increased to feuds between individuals, villages, and districts. In those days a man is said never to have left his village to go far alone, no one could go a few miles without encountering others who were looking for someone to rob or slay, and hence it is that the average native of Kitui knows nothing of the country except in his immediate neighbourhood. Where the Masai did not raid the internal warfare was fiercer than anywhere, thus at Mutha the raiders are said never to have come, but this place is reputed as the worst part for fighting in former times.

Thus it was that the Akamba had no chance against the Masai, in Machakos, on the other hand, the natives successfully withstood and defeated them, and yet in no country did the Masai stand a poorer chance than in Kitui; here the dense bush afforded every advantage to those armed with the bow and poisoned arrow and great hindrances to the enemy whose weapon was the spear. The Theraka admit that the Akamba were dangerous people to tackle in the bush, but then the Theraka had to deal with the Akamba combined against them. Nothing helped the Masai but the extraordinary divisions among their victims, it seems, in fact, to have gone so far that in many cases one village was inwardly pleased to hear of the annihilation of a neighbouring village, seeing in this an old score paid off. I think it is also not to be doubted that but for this state of affairs we should have had a hard fight to subdue the country.

Thus there was fierce fighting for long in Kitui, and in addition to this there were armed Arab caravans which carried off slaves and ivory unhindered. The end to all this came in 1898, when the Government station was built. It did not take long then to put a stop to the fighting and warfare, though here and there similar outbreaks would occur, the last known raid having been made on the Galla by the people of Ndatani about 1906; there is a Galla girl taken in this raid still living in the place.

No sooner had law and order been more or less established than a severe famine broke out, which became the more fatal as it was accompanied by a violent epidemic of small-pox. During this time thousands must have died of starvation and disease. Numbers wandered into Kikuyu, where many of them have remained, but the largest migration was to the coast where the Rabai Akamba are mostly such as left Kitui to escape the famine. In the outlying parts of the district unlimited lawlessness reigned and the claims for cattle and women dating from that time are numberless.

The foregoing turbulent period is now past, and there is no less warlike African than the Mkamba of to-day, but the troublesome times are of too recent date to allow of their traces being entirely obliterated and therefore hostile feeling is still very prevalent. I have heard Akamba say that they dislike all foreigners, but they hate each other. There are so many old scores left unpaid,

so many know of cattle and women which were theirs being now in the hands of others; the man whose four sons were killed knows those who killed them or their relations, which is all one, and he will not easily forget his grievances. Villages which fifteen or twenty years ago were deadly enemies will not easily harmonize now, and hence it is that natives living quite close to each other remain as perfect strangers, not necessarily because they have an old account to settle, but because from old habit the Mkamba has nothing to do with "strangers." I have known this to be the case with villages not half an hour apart. And being now unable to settle his old grievances, the Mkamba turns to litigation and perseveringly adheres to some old claim to foster his hostile inclinations. Thus despite Government and order the Akamba of Kitui continue to live as isolated as they can, caring nothing for the fate and fortune of most of their neighbours and utterly opposed to undertaking anything in common.

This short review of past times in Kitui can hardly be called historical in its detail, but what I have been able to record I have mentioned because it is so evident that those times have left deep rooted traces on the people, and, without knowing the cause, one cannot appreciate the fact that immense adversities have done much to form the character of the Akamba. It should also be remarked that totally different circumstances have been at work here, compared to the past of the Machakos section, and, therefore, what holds good for the one district must not be necessarily applicable to the other. There is also another point to be considered before closing this. The people have only lately emerged from remarkably turbulent times, but these times are presumably not of very ancient date, and, therefore, their traces may not be very lasting. The Mkamba may be recovering now, and under altered circumstances we may, in time, get to know the Mkamba as he really is; anyone knowing these people, and forgetting this, might despair of them altogether, but I think that it is no exaggeration to say that a tribe with the characteristics of the Kitui Akamba could scarcely in former times have continued as a tribe for long. There may, therefore, be in the Mkamba traits which have not yet come to light. But as he is to-day, thus he concerns us for the present, and before entering upon this subject it was necessary to consider the influences which had been at work to form the Kitui Mkamba.

CHARACTER OF THE AKAMBA.

In the study of a tribe it is absolutely necessary to make an estimate of their character. Laws, customs, acts and ideas are all either cause or result of this. To arrive at such an estimate is, however, not easy, for in our eyes the most prominent traits will always be such as are continental characteristics, but that there are differences between African tribes as great as between European nations becomes obvious when we compare, for instance, the Akamba with the Masai. National character may, however, easily be overlooked and lost in the continental

stamp; but even if the two are not confounded, there are other points to be borne in mind. In the first place we may misjudge by laying too much stress upon the attitude of natives towards ourselves. It should be remembered that on the one hand we are intruders in their country, and on the other hand we form an element entirely foreign and well-nigh incomprehensible to them, which bewilders the primitive mind. A more correct rule to follow will therefore be to observe their attitude towards each other, but even so, we must be careful lest we ourselves have influenced this. As an instance of what is here indicated, I can quote the following case: The people of a certain district decided upon committing a breach of a local law, and the whole population took a very binding oath (Muma) whereby it was provided that the oath should not be disclosed, and further that if the offence became known to the Government they should one and all confess to it. When, however, two men were arrested in consequence of the offence committed, they not only at once disclosed the oath, but, contrary to its conditions, all the rest denied it. Thus the fact that a number of Akamba could combine even to the extent of binding themselves by oath did not show a very unanimous spirit among them after all. And this is a very common experience with the Akamba, no matter how sacred an act may be to them, despite all supernatural terrors which one would suppose sufficient to bind them to a common interest, the discordant spirit is yet stronger, and nothing lacks more in their composition than a unanimous feeling. My short review of their past has already dealt with this, they never could submit to a common chief, or join to oppose a common enemy. Above all the Mkamba prizes his independence, to be subject to anyone or bound by anything beyond mere family ties is hateful to him. Often small settlements are found in isolated places where water is scarce, where their fields are constantly destroyed by wild beasts, just where we should expect to find the villages close together, but it is just in such places that we find them farthest apart and entirely strange to each other. When for any reason it has become necessary for a settlement to move elsewhere, one would suppose that they would all move together to one place, but quite the contrary is the rule, as if tired of being together, and fearing that they risk becoming dependent on each other, they will disperse all over the country. Anybody outside the family is a stranger and anyone in authority an enemy. "He is not my father," is often heard in reference to a chief, by which is implied that nothing obliges the speaker to acknowledge him or heed his orders. I remember a Mkamba refusing to go to a village half an hour's walk from his own, the only village too that was not several hours' distance away, on the plea that the people there were strangers to him. If a Mkamba meets another on the road he has nothing to say to him, and will probably look away, for he is a stranger and does not concern him. This attitude has often been put down to surliness, but I hold that this is not correct—it is much more due to his desire for independence closely connected with another characteristic. The Mkamba is much too mistrustful and suspicious to make it possible for him ever to work to any extent in combination with others. His mind runs along dark and complicated lines, with a distinct

inclination for things mysterious and distorted. They have perhaps least of any tribe reason to suspect Europeans of evil designs, yet, reasoning after their own inclinations, they seem to regard it as impossible that we should have come to their country with anything but a hideous purpose, which they always expect to see revealed. Thus it is that terrible stories of horrible intentions on our part are constantly current. It is typical of the Mkamba that such suspicions are most easily dispersed by recounting to him all that the Europeans could do if they liked. Nothing gives his mind more peace, I think, than to know that he is entirely in the hands of stronger forces, for then he will cease to bother about it and sees the absurdity of his attitude. Yet, despite all this, when a Mkamba is called upon to give evidence in a dispute, or to speak his mind in regard to two men, he seems to take into consideration only one point, namely, which of the two lives nearest to him—the nearer to him a man lives the stronger will be his support of him against the other, and family and clannish feeling are extraordinarily strong in him.

Like all Africans the Mkamba is strictly conservative, he can brook no change or alteration. Here I would point out that if we remark many fallings off from old customs, these nearly always can be traced to our own influence. It must, however, be admitted that the Mkamba is more averse to improvements than to other changes; he will often maintain that it is impossible for him to forget his traditions and customs, yet he seems easily to overcome the difficulty when the old habits imposed restrictions upon him, as, for instance, the exclusive right of only the oldest men to drink honey beer. Particularly opposed to improvements and new-fangled ideas are the women, who are, on the whole, far more intractable and stubborn than the men. Her wishes do not go far, but what a woman wants she will have, and I have known not a few cases where women have committed suicide when forcibly restrained from getting their own way. Otherwise she is patient, industrious, and serenely indifferent to all going on around her. It is no uncommon sight to see a Mkamba run for life at the sight of a European, while his wife will be found sitting by the roadside undisturbed, and looking as if nothing could induce her to run.

On the whole the Mkamba woman cannot be called faithful as a wife, any time she may prefer another man and then she will run away and if she is brought back by force she will repeat this time after time; there is only one way of keeping her and that is to retain her children, but on the first occasion she is sure to run away again and will probably take the children with her. The truth is that the women rather cling to their position in life, which is that of a worker or a piece of goods and thus in no wise contaminable by dishonour or bound to fidelity. Morality is altogether at a low stage among the Akamba, as many of their customs show, but most deplorable is the low value set upon any virtues and the indifference to all imputations cast upon them. Thus courage, hardihood, and strength are not prized at all; to a Mkamba it is best to be cunning and deceitful, his weapons, the bow and poisoned arrow, are typical of such a character. When upbraiding them on this or any other account one might expect to find fervent denials on their

side, but as a matter of fact one is almost certain to meet with frank admissions, and indeed a Mkamba is much given to further elaborating upon his failings and bringing to light more than one was prepared to lay to his charge. A missionary once reproached some natives for their repulsive habits, but his abuse of them only met with their entire approbation; exasperated, he said, "But are you not like hyænas?" "Yes," they said, "we are hyænas." There is nothing admirable about all this but at the root of it we find one of the most curious ingredients of the Mkamba character. It is a particular pride, a pride in self-sufficiency which asserts a superiority equal to their demands and which scorns improvements. This trait is and will be one of our greatest difficulties in advancing them, but it should be reckoned with because if once turned in another direction it may become a great help.

As I have said before and as I hope to show later the Akamba are great litigants, so much so that one might call it a pastime for them. Their devotion to this may easily be misunderstood and therefore it should be noted that here also there is a deeper-lying reason. Nothing which is owing can ever be remitted, it matters not how long ago a claim arose or whether the original parties in such a case are dead and gone, for debts, claims and property are all inheritable from one generation to another. To hear two men enter upon an endless dispute regarding some paltry article which was owed by one of their grandsires to the other takes one's breath away. This gives the Mkamba the appearance of a grasping nature but I do not think this is entirely so. He will never forget the smallest item due to him but he does not bother much about that to which he has no claim. I cannot recollect any case of downright theft committed by a Mkamba, practically always the stealing was really the taking of something to which the culprit thought he had a claim. Of course the temptation may make the thief's imagination somewhat elastic in such cases, but nevertheless without any such thought it has always seemed quite clear that the theft would not have been committed. I do not speak here of the Mkamba represented by young unmarried men who for lack of any occupation are sadly given to purloining whatever comes in their way, I refer here to the average respectable native. In the same way a Mkamba will never cease to hanker after something that he has lost, whether it be the calf of a cow which he owned long ago or blood money for a relation long dead. I remember a man coming to me to sue another for blood money on the grounds that he had accused his father of murder and, before the culprit could be tried, he had died in prison. He made no pretence that his father had not been justly accused, but when I explained that his claim could not be entertained he said, "Well, what is to be done?" It was a sore problem to him and he had evidently surmized what my answer would be, yet he had lost a relation by what seemed to him an unnatural death, therefore he was entitled to compensation and since he could not get it, "What was to be done?" I have no doubt that as long as he lives he will continue cogitating on the matter. Thus I think that when the Mkamba appears grasping it is really due to a keen sense of justice, but justice to him means not merely the prevention of injustice but chiefly

the upholding of the demands of justice; he will never admit that justice has been done so long as a genuine claim is not admitted for lack of evidence, nothing horrifies his sense of justice more than this. So also a Mkamba rarely bears a grudge to one who has punished him, no matter how hardly so long as he has not been unjustly punished.

To strangers, although the Mkamba does not like them, he is hospitable, in his own way too he is polite though not servile. Towards his children he is remarkably kind and tender, nor are the women subjected to rough treatment from an African point of view. When given charge of an intelligent animal such as a European dog or a horse he will be extremely careful of it.

In respect to intelligence the Akamba are very much in advance of other tribes. If educated they learn quickly, and for manual labour requiring a little intelligence such as machine work, they are preferred by many. An extraordinary handiness and skill is displayed in their ornaments, arrows, and other articles of use. They have also a great liking for music, and are capable of remembering and following light tunes. Very little use has been made of the Akamba for labour, partly owing to their inability to stick to any work, but more so owing to their inborn indolence. Work is to the Mkamba nothing short of a misfortune; when he does take to it a very little discomfort, such as he would otherwise not notice, will completely incapacitate him, while he has then the appearance of undergoing the deepest misery. It is a matter of great regret that the present generation seems to be increasing in indolence, and even when food is short there are hundreds of young men capable of becoming useful workers who would sooner starve than take to employment. There is little doubt that one cause of this increasing indolence is the general tendency to drunkenness. There being no warfare now, and therefore no demand for hardiness, the sole occupation of the young men having also thereby ceased, they have degenerated and usurped the rights of the elders. I have myself seen whole villages in a state of intoxication down to half-grown boys. Following upon this comes of course a growing disregard for the elders and all good custom and since this was the only form of authority known to the Akamba in former times, the result is a total lack of respect for authority, and the young men are thus becoming a mere lawless rabble of unemployed.

The general habit of drinking has had its effect too upon the physique of the people, I think. In this respect the Akamba of Kitui have nothing of which they can boast; out of any ten or twelve young men perhaps six or eight will be found to have unsound lungs or hearts. I remember that out of thirteen young men picked for their build only four were found to be constitutionally fit for service in the police force. There is a marked difference between the build of people in Machakos and Kitui, those within the vicinity of the latter station being particularly weedy and stunted in growth. There is little doubt that it is just in this part that the regard for custom is at its lowest, and therefore the drinking at its highest. Possibly, too, during hostile times there was much inbreeding, which brought its results. But if the men are unfit for hard work, the women are exceedingly tough and hardy, and

whereas a man can rarely carry more than a 45-lb. load, most women will easily shoulder 60 lbs. I have seen women carrying as much as 140 lbs. At an early age also the men become useless for work, while the women will continue to labour up to a great age.

I am afraid that there is very little to be said in praise of the Akamba; they are unattractive in manner and do not improve on acquaintance, neither do they impress one as interesting people. For these reasons they have few, if any, friends among Europeans, but already a few have discovered that if they can employ a Mkamba they may have an exceptionally useful man. To be fair to him he has the makings of a most useful native in him, besides certain traits which cannot but be of real value one day; perhaps much that we find lacking in him lies inert awaiting a proper chance to come to light. We have to save him from falling into utter uselessness through degeneration, and what we must bear in mind is that this degeneration to a large extent came and will increase through our influence. Talking to him is useless, and worse than useless, for talking is his own forte and method of hoodwinking, at which he is a past master. Suspicious as he is by nature, the more persuasive one appears to be, the more he suspects that you are trying to talk him over to your own ends, and the less he will be inclined to conform to your wishes. I do not mean to convey the idea that no advance is to be expected from these people, but the signs of such advance are few, while the advance noticeable is not very marked. Personally, I am persuaded that the older men are incapable of progressing, the ideas and views natural to them and instilled in rough times from birth are too irreconcilable to advance, and too rooted in their minds to allow of room for other ideas. What progress we expect must therefore come from the younger men, who would not be difficult to advance could they be drawn away somewhat from the allurements of their present habits of life. In dealing with them I have always found the young men much more tractable and amenable than the elders, although the latter frequently themselves complain about their sons. It seems to me, therefore, that while we look to the elders for the upholding and preservation of old customs and traditions, those who wish to create a progressive spirit among the Akamba should devote their attention mainly to the young men and their training.

In dealing with the Mkamba it is a great mistake to reckon on outwitting him, for he is not easily duped, although he may appear to be so. Nor can he easily be frightened, for he will obstinately sit down and await what may come; then, but not till then, he will be frightened, for what is impending he loves to disregard, and nothing makes one more helpless against him than his discovery that your threat was an empty one. Deceitful as he is, I have always found it the best policy to trust a Mkamba, for then he may not fail you, while, when he sees distrust, his curiously perverse mind seems to start meditating on what it can hatch. In the same way it pays to be frank and straightforward with him; he will easily make up his mind if he sees that you have made up yours, but once given a choice his evasions will be endless.

THE VILLAGE.

The most favourite sites for villages are underneath the hills, here and there they are found on the hills, and formerly, the hill tops were favoured, of which fact the remains of old villages and fields, overgrown paths, broken earthenware pots and hollowed stones for grinding corn, found on most hills, give ample proof. It is said that the Akamba built on the hills for protection from the Masai, and that only latterly have they taken to the low-lying country. But even now the village is rarely placed so as to be easily detected, it is never near the main road, and is generally, if not in the thick bush at least behind some rising ground.

What we must speak of as a village is really the abode of a family numbering as many huts as there are married women. Frequently each hut is partitioned off by a thorn hedge, but more frequently the wives of one man have their huts together in one enclosure. Adjoining these are generally the huts of married sons also with their enclosures, other members of the family, brothers and cousins may add their huts, but beyond those the village rarely extends; strangers are not often found in the family settlement, though latterly I seem to have noticed some change in this respect. All these huts lie more or less in a circle and the whole is surrounded by a large hedge sometimes made of poles up to 10 feet in height, sometimes consisting merely of thorn branches laid closely together. Each division has its outlet made of stout poles which is closed by a large thorn branch when the owner is not at home. Occasionally the hedge is dispensed with, but this is not often the case, and will always mean that the village has no stock. The village is thus a very limited settlement, and may count only one or two huts, the largest I have seen counted twenty-nine huts, and, therefore, when speaking of a Mkamba village, one must not imagine it to be like other native villages, with streets and market places, indeed, if the family could contrive to live in one hut there would be no villages at all, but single huts dotted all over the country.

The living huts are conical shaped, 6 to 7 feet in diameter. They are made of a framework of sticks, bound together with bark string, and at times supported by a pole in the centre. The whole is thatched with grass simply tied into bundles, and attached to the framework. The hut is so simply made that its construction takes no more than a day's work, and I have often seen the grass taken off in a few minutes and the framework carried bodily away to another site.

The doorway, like the entrance to the village, is extremely low so that it can only be entered by bending the body low, it is closed by a frame of grass or reeds. Inside there is usually one bed which consists of four uprights and four horizontal poles between which is stretched a skin, or failing that a number of sticks are laid across. If there are two women in the hut, each has her bed, or, if there is a grown daughter, she will also have her bed. Very often there is another bed for the small children. In such case there is not room for more furniture, but as a

matter of fact, the Mkamba has none, though in every hut there will be found an endless litter of bowls, gourds, earthenware pots and stools. In the centre are the three stones used for cooking. As there is no smoke outlet, and the interior is completely dark, and the flooring is rarely swept, the atmosphere inside is scarcely savoury, the more so as the poultry and goats are kept there in the night time, and the calves during the day. Flooring is not provided, but from the droppings of the goats a hard surface is formed which serves as a floor.

Outside the hut is a space where the cattle are kept at night, this also is never cleared, and consequently in the rains it forms a mire inches deep, so much so that the natives themselves often have to lay down beams to secure a safe passage. Otherwise the village is not dirty, at least there is nothing offensive thrown in its vicinity.

Behind the hut are the food stores which are raised some 2 feet above the ground. They are really only platforms which hold a huge bottle-shaped grass basket called "Kinga," in which the grain is kept, and over these there is a grass roof. These baskets are very well made and to keep out the weevils and rats are plastered over with mud or cow dung and sealed at the mouth in the same way.

Outside the enclosure is an open space, generally shaded by a tree. This place, called "Thome," is one of great importance. The natives are very fond of sitting here for a few hours after dark by a large fire, for which there is always a stack of wood, and it therefore becomes a great place for gossip and talk; it is also the workshop of the village. The Thome marks the boundary of the village, strangers may come here, but may not enter the enclosure; it is here that the many long discussions regarding marriage dowries and legal claims are conducted, especially if it be at the village of a more important elder, such as is now usually a Government chief. But the Thome is also more than the assembly place of its village, for where there are several villages more or less closely situated together they use one and the same Thome, and altogether they form what is termed a "Thome" in which one of the elders is its head (*Mtumia ma Thome*). The members of a Thome hang very closely together and form almost a little State by themselves, perhaps the only form of State known to the Mkamba. In this sense then a Mkamba village may be very large but there is no continuous group of huts and many of the villages belonging to a Thome may not be within sight of each other. In the Thome will generally be found the *Mtumia*, the father of the family. He is the father, elder and despot of the family, and the true Mkamba knows no authority beyond his. To him belong all the cattle and goats, none of his sons possess anything, even their wives are bought with his property, all the dowries paid for daughters of the village, and blood moneys for members of the family who have been killed, go to increase the father's stock. Meanwhile the father is not expected to use the cattle as he likes, for he is essentially the head of the family, and as such he is the sole owner of its wealth. If a son leaves the village he will get what would be his portion of the stock, but so long as he stays with his father

there is only one common ownership, represented by the father. If the Mtumia enjoys the privileges due to him by custom his orders will suffice for any member of the village; none of the others will even sit beside him. As marks of his position he carries the forked stick and three-legged stool. The geometrical designs with which these stools are decorated in Machakos are not seen in Kitui except as importations; if they have any decoration it is usually of a very rough sort. They differ from the stools used by the women, being only about 3 inches in height, while those of the women stand 10 to 15 inches off the ground. An exchange of stools between men and women is not permitted, and a breach of this rule entails a fine of one goat. With regard to the position of the Mtumia it must be admitted that he does not often enjoy the privileges due to him. Young men will frequently be seen carrying the same stools and using the forked sticks; particularly in the way of beer drinking, which formerly was the exclusive right of only the oldest men, there is now practically no difference between them and the youngest men. At least every married man now indulges in honey beer and most of the unmarried ones do likewise. It is said that this change came about in a curious way. Formerly, when the young men climbed the trees to get the honey they received a portion of the honey, but in time they began to demand some of the beer made from it, and the elders being unable to climb the trees were not in a position to refuse this demand. This may have been the cause in part, but obviously the deeper-lying reason is the loss of respect for custom and their betters on the part of the young men. In spite of all this it must be admitted that to the average Mkamba the behests of his father are sufficient for him, and when it is not found to be so it is a sure sign of a marked falling off of all native morality, for if he does not respect his father he will respect no authority.

Next to the Mtumia (pl. Atumia) comes the "Nthele"; these are men who might be called middle-aged; as a rule reference is made to them as those who do not dance any longer. The reason for this is that the young men or "Anake" frequently continue to take part in the dances for some years after they are married. Nthele and Anake can therefore not be taken to mean married and unmarried men. The male members of the family take a very small share in the work of the village, but of all of them the Anake are the most indolent and are to be regarded very much as the drones of the Mkamba hive. Practically their sole occupation and only amusement is dancing and they are therefore always to be distinguished by their abundance of ornaments. They lead very unstable lives and many of them have no real habitation but live at different villages; they have no huts and sleep in the food stores; formerly, however, this was not so and quite latterly a few have begun to build their huts again.

A more useful class are the "Waeliti," or unmarried girls. As a rule they help the women to carry the daily supply of water for the village, and they also help in the fields. They are, however, allowed much liberty and devote considerable time to dancing. If, however, they are allowed a certain amount of licence they can hardly be grudged this, for later on they will be required to work hard enough.

Without doubt the most admirable figure in the village is the "Kiveti," the married woman. Stolid and apparently serenely indifferent to all that goes on around her she will always be found occupied one way or another. She milks the cows, tills the fields, threshes, pounds, and grinds the corn, fetches water, cuts and carries the firewood, besides many other duties which the men consider beneath their dignity to perform. Latterly when there has been no work in the fields the women have often been required to herd the cattle. It is said that if the women had the choosing of village sites all the settlements would be on the river banks, unfortunately for them they have not the choice and so the Kiveti has often long distances to go to get the water; in the dry season she may frequently have two or three hours to go; I have seen settlements where the nearest water supply was seven hours' march distant. This is her first task in the morning and when she has tilled the fields it is usually about sunset before she is to be met trudging home with a large load of wood on her back, rarely lacking the inevitable baby mounted on top and in her hand the eternal "Chondo," a string basket which she makes as she goes. There seems to be no age at which the women are excused from work. I have seen some who must have been well over seventy years of age working in the fields as untiringly as the youngest girls; often a woman lives alone with her son, a sturdy young loafer who is tired of his very indolence, but she is the one who keeps the wolf from the door. Yet the Kiveti never grumbles or seems to meditate upon the division of labour, so long as she has time for it all she is content to do it and although I have heard all sorts of complaints from women, I have never heard them object to their work. Apart from her labours, however, the woman has not much at which to grumble, indeed, it is often a question whether she is not the master in the long run, for her husband has very little control over her when she is obstreperous and finally, if exasperated, she will run away and the husband has to be content if he can recover what he has paid for her. The Kiveti is a strong-minded person, and will assert her rights with vigour. Thus I remember a man who had left a district in which he had a "Ithembo" (a place of sacrifice). On his departure there was no one to make the necessary sacrifices and ill-luck was therefore boding to the people. Neither chiefs, councils, nor any authority could bring him back, but when I advised the women to go in a body he returned straightway. By custom a man may not strike his wife in the field or if he does so he must sacrifice a goat on the spot. If he fails to do this the women arise in truly amazonian fury to demand the goat. They perform a dance for three days and then armed with sticks set forth to search for the culprit. All the men then hide, for anyone who comes in their way, excepting the very oldest men, is unmercifully beaten; finally they storm the offender's village, tear it down and destroy everything, and in the end take the goat by force to sacrifice at the spot where the woman was beaten, after which they retire peaceably leaving the men to eat the meat. It is beyond doubt, too, that the women have a strong influence in the village, as they could scarcely fail to have, being its main support. Latterly a great effort has been made to induce the Akamba to take to iron hoes in place of the wooden Mue sticks, but they have obstinately

refused to be induced to make such a change. The reason I think for this is that it is unlucky to use iron for tilling the soil and while it would not be difficult to persuade the men to abandon this belief, it is not they but the women who would have to use the hoes; the women, however, are most conservative, and if they decri the iron implements as harmful modern inventions the men will not, in fact cannot, oblige them to use these. On the whole one seems to notice that the excessive usefulness of the woman engenders in the man a regard for her which is rather pleasing, his attitude is one that implies great helplessness without her, and indeed the Mkamba without a woman to look after him is quite lost. He often talks of their sex as creatures of no account, but experience will tell you that if one wants anything it is always good to solicit the help of the Kiveti; even her lord's small store of cash is given into her keeping and she usually hides it away somewhere where he himself cannot get at it, consequently when the husband wants any money he frequently has to run to the field to get it from his wife. The duties of the boys are particularly the herding of the goats and calves. The young Mkamba has, however, much besides to learn. The use of the knife, in which they are very skilful, the making of ornaments and other articles, but in particular the use of the bow and arrow, are all necessary parts of his training and as intellectual learning there is all the law and custom of his tribe to be acquired. A regrettable part of his education is the instruction given at the second circumcision in the art of stealing and much else that is corrupt and depraved.

Young children are carried by their mothers in leather bags on their backs. This bag is stored away and later made into a pair of sandals when the child has grown up.

Formerly the clothing used by the Akamba was of skins, such as may still be seen worn by most of the women in Machakos. These have now entirely given place to the ordinary European blanket for both sexes. As a matter of fact the Mkamba does not use much clothing, for in the fields it is discarded, as also in the village, so that the blanket is practically only worn when on a journey or when going anywhere. Poorer people wear only a loin cloth, this is generally not worn by men who have blankets. Of late, the young men have taken much to using a loin cloth and a small blue or bright coloured linen cloth over the shoulders, but it is by no means all who can afford this. The women also wear a short apron from the waist, about 6 inches in front and about a foot broad behind; of late I have noticed the introduction of short skirts made of pleated cloth, which, I am told, is a reappearance of an older custom. The aprons are thickly smeared with fat. Children rarely have any clothing excepting the girls who wear the same sort of aprons as are worn by the women. Head-dresses are really more to be regarded as decoration than clothing, they consist of monkey skins made into tall hats and caps of various hides, often with the hair left on them, so that they look more like wigs. Sandals are very often worn for travelling and are made of hides in double or treble thicknesses.

The ornaments worn by the Akamba are almost all made of beads and wire.

Of the former, necklaces are made of a single row of beads strung on a wire, and are worn by both sexes; a very favourite decoration for young men are broad collars of blue, green and yellow beads. Beads are otherwise mainly used by women and girls. A number of bead strings are worn round the hips; in the eastern parts a string of thick glass beads is worn, to which is attached behind a broad pad of bead work, holding a tail of chains, which is cut off when the girl marries, while the bead string is left. On the legs and above the elbows, bands of bead work are worn, while from the ankle to the knee the legs are often cased in a string of beads, the latter decoration is common, particularly in the eastern parts. The patterns into which the beads are worked are remarkably neat, and show a taste for colouring and regularity which is surprising. But more ingenious and finely worked are the many wire-made ornaments, particularly those worn by the Anake. The chains of brass, copper and iron wire which are worn in profusion are sometimes of such fine make that one could scarcely believe them to be of native work, those worn round the ankles and below the knees are sometimes so delicately made that at first sight they do not look like chains but bands of thin metal. Such chains are also worn hung in the ears or passed through the lobes and carried over the top of the ear. Round the body bands of spirally wound wire are worn. The small tweezers used for pulling out the eyelashes and eyebrows are usually bound round with thin wire or giraffe tail hair. Older men usually discard most of these decorations and retain only one or two necklaces and a few chains in the ears, a chain is also worn round the neck, from which hangs a pair of tweezers, used for pulling out the hairs of the beard, together with the never failing snuff box, which is made of horn, hollow reeds, palm nuts and a variety of other articles. Common to both sexes of all ages are the spiral brass bracelets worn on the arms: the Anake are very fond of wearing these so that they cover the whole arm and often become so tight on the limb that they have to be cut to relieve the pinching. The Anake are very particular about their ornaments and keep them clean and bright with fat and other means; if ever a Mwanake goes to work he will strip himself of all his decorations rather as if he were going into mourning, but as a matter of fact, it would be impossible for him to work much with it all on. The variety of ornaments is most astonishing as is also the wonderful use made of the most common European articles, such as metal parts of umbrellas. A most common ornament is a single ring of wire or brass, these are worn on all the fingers and thumbs; occasionally one sees long oval rings covering the whole length of the finger, they are said to be fighting rings but I think they are not of Mkamba origin. Coins hollowed out in the centre are also very commonly used as rings, both on the fingers and in the ears. Peculiar to the older men are rings of elephant hide worn above the elbow; it is said that formerly if a man had many of these he was much respected as they denoted that he was a great elephant hunter. Large rings of ivory neatly jointed with ebony rivets are also worn above the elbow, likewise heavy metal rings, but these are said not to be of Mkamba but Galla origin.

Occasionally one sees little brass spirals hung by a hook from the rim of the ear, these were apparently much used in former times as they are now by the Theraka. A distinct feature of the Akamba is the absence of large ear decorations. The ears are pierced to admit fine chains and may be drawn down slightly by the weight but they are never distended as among so many other tribes. Altogether the Mkamba uses very little disfigurement of the face and body.

Of such decorations to the body as are used the most distinctive is the cutting of the teeth; for doing this a small chisel is used; the operation is performed at a very early age and results in a very rapid decay of the teeth, particularly of those which are cut into very fine points. I have heard it said that the people of different parts have no fixed manner of cutting the teeth but affect whatever style suits them. I have, however, never heard this from people who have travelled much in the country, the three styles I have already mentioned are in my opinion most rigidly followed by the people of their respective districts and it is even not unusual to hear Kitui people speak of others as "men who cut two teeth." It is doubtful whether this custom is very old among the Akamba; they themselves say that it was not done in former times and I have seen a few very old men whose teeth were not cut and who laughed at the present-day habits, particularly on this account. I am told that the same is the case with some of the oldest men in Machakos. I was also told by an old man that formerly it was not the custom for men to shave their heads excepting after a certain age and that certainly the various "foolish" styles of hair dress of the present day were not seen in his time. To-day it is a very common practice for both sexes of all ages to shave the head completely, but there are also many fanciful styles of dressing the hair when that is not done. These styles change very rapidly so that I can recall several men whom I have seen on many occasions but scarcely ever with the same manner of wearing the hair. It seems that the Mwanake should leave a little tuft of hair on the crown but more often he now twists it into little pointed bunches all over the head.

The hairs of the face, including the eyelashes and eyebrows, are all pulled out. It is apparently considered ridiculous to leave these, but old men may be seen with short beards. The practice of pulling out the eyelashes accounts, I think, for so much eyesickness which one notices among the Akamba; according to them, however, it has the opposite effect and when a man has bad eyes he will at once pull out all the lashes should he not have done so before.

Tattooing of the body is done by burning and scarring the skin. The former is affected more by the men but not very frequently. The women often adorn themselves by cuts made in the skin which is pulled out for this purpose; this makes a large lump and these are carried in lines over the breasts and down the abdomen. Between the breasts thick lumps are raised by deep cuts into the flesh. These decorations are, however, not common to all Akamba, the majority perhaps have no adornment of their bodies at all, and I am not sure that such decorations harmonize with their ideas of beauty. The Mkamba's conceptions on this subject have

always seemed to me very free from anything distorted. If told to pick out the best-looking girl at a dance he will generally select one that a European would probably think the best looking, but the Mkamba is a remarkable connoisseur, for mere features of face will not suffice for him, he takes everything into consideration, features, build, quality of skin and colour. I remember a man once expressing his admiration for a girl, she was very beautiful in many ways, but, alas, her knees were all wrong!

The Mkamba is of course not to be compared to some tribes in looks, on the contrary he is rather plain and lacking in expression, such as there is has rather the tendency towards surliness but many of the younger men have quite good features and when induced to smile they have a very pleasant expression.

Of the occupations of the Akamba the most important is the cultivation of the land. They are, however, neither expert cultivators nor will they cultivate anything beyond what is required for their immediate use; despite the frequency of famines no Mkamba thinks of ever sowing more than is necessary to carry him on to the next rains. The fields are situated on the slopes of hills, very often just where there is no water and in fact the choice of the ground seems more to be decided by the quality of soil than from a point of view of moisture. The reason is, I think, that the crops are ripe shortly after the rains, so that unless these fail the supply of moisture will be sufficient, whereas down in the hollows the grain is too liable to be washed out; also, so far as the "Maweles," their chief source of food, is concerned, the soil seems to be a far more important consideration than the moisture. The ground is first cleared by firing the bush; this practice, which often lays waste miles of country where an acre or so is sufficient, is more or less necessary, as the labour of cutting it would be too much unless the ground were prepared a year in advance, a thing the Mkamba would, of course, never dream of doing. After burning it is cleared and the roots are dug up. For this work as well as for hoeing the "Mue" stave is used. This is a wooden stave made of various sorts of hard wood cut to a flat point. For sowing, an ordinary pointed pole is used, the person sowing strikes the pole into the ground and drops a few seeds into the hole thus made, covering it up again with the foot; smaller grain such as Maweles is sown by scraping the ground a little with the foot. The same patch of ground is used for about three years, and then it is left and another site chosen. In the same field all the different sorts of grain cultivated are sown; as a rule the Mkamba has two or more fields, a small one near his village, and another farther away, often a considerable distance from the village. The grain cultivated varies somewhat in the different districts, but the stock grain is always "Maweles" (Kikamba "Mwe"). Maize is grown in most parts but not always (Kikamba "Mbembe"). These two are sown during the autumn rains, called "Nthua," and in between them are sown beans. All these ripen very quickly and are harvested in February or late in January. This harvest time is an anxious one for the Akamba, for if the rains fail, not only their chief food supply is lost but the next crops are always even more uncertain.

Out of three spring rains (Kikamba "Uuaa") I have not seen one that did not fail, and only once the autumn crops have succeeded, and then only very meagrely.

Many are the destroyers and robbers to be guarded against in the fields. Antelopes of every sort, wild pig, even buffalo and elephant, but more than any of these the baboons and porcupines are feared. To protect the crops by day and by night, watchers are placed in the fields on platforms. They are usually boys, girls and young women, who keep up a continuous chorus of cries and drive away intruders with stones slung from a sling called "Kikutha." Very often a grass rope is carried from the platform crosswise over the field, to which are attached broken earthenware pots, gourds, etc., to make a jangling noise when the watcher pulls it.

In the spring rains the "Mbazi" (a kind of bean growing to about seven feet in height) is sown; it is reaped in September or early October.

The threshing of grain is done by the women. A piece of level ground is chosen and plastered over with a thin layer of cow dung. On this the stalks are heaped and the women, standing in a circle, beat it with sticks. This is done to continued cries and singing, the work being done in time to the singing; it must be admitted that the time occupied by the work bears no relation to the singing. Beans are husked in a similar manner, but with a short, heavy stick. Maize is removed from the cob by hand.

The daily food supply is taken from the stores and prepared by the women. The husking of the grain is done by pounding it in a wooden trough with a pole, after which it is poured from one bowl into another so that the husks are carried away by the wind; if fine flour is desired it is then pounded again, and after that it is ground in a hollow stone by another small stone.

Besides food stuffs, gourds are grown in the fields, but to nothing like the extent to which they are cultivated in Machakos.

Tobacco is also grown in small quantities for making into snuff. Most of the tobacco used comes, however, from Kikuyu. Snuffing is a universal habit among the Akamba, while smoking is not very commonly seen. As a rule the Mkamba takes a pinch of snuff between his fingers, but it is very common also to use a little brush made of goats' hair which is dipped into the snuff and inserted into the nostrils to be snuffed up; occasionally one also sees a little sort of flat spoon used for this purpose.

The land for cultivating a field, like the site for a village or the bush for cutting firewood, is free to everybody to use as they like. Between the different settlements there are always stretches of uninhabited country, so that disputes between the different settlements cannot easily arise, and within such settlements they rarely occur; for one thing, of course, the population is so thin that there is plenty of land for everybody. When, however, a man moves to a new district he is required to give a goat to the elders first. This is required for the taking of an oath between himself and the elders. The oath binds him to help every member to recover any lost property that he may know of, at least this is how it

was explained to me, but I surmise that it really binds him to be faithful to the settlement, and if so this may account for the fact that no Mkambo will ever give adverse evidence against a man of his own district in a case against another of a different settlement. The new-comer is then admitted into and regarded as a member of the settlement. The goat paid for this is called "Mathanzu."

All important in the village are the cattle. To a Mkamba his greatest pride and joy are his cattle, nothing else has the same value in his eyes; I fear even a wife is a second consideration to these, for after all she is only valued as a portion of the herd. But it is not the mere feeling of opulence that makes the Mkamba prize his cattle so highly. To part with a cow, excepting for the purchase of a wife, is grief and pain to him, and in fact the cattle paid for a wife can be regarded more in the light of a deposit, for if she leaves him he has the right to claim his own animals back. No sort of ownership by purchase or otherwise can persuade a Mkamba that another man has a right to the calf of a cow which is in his kraal: if the cow is his, then its calves should be with him. A native said to me once, "Every day I look at my cattle and I say these I inherited from my father, those are their increase, those were paid for my brother who was killed, and these I got for my daughters, but if I slaughter or sell them, who shall remind me of all this." It is also regarded as very unpraiseworthy to dispose of a cow received in payment for a daughter, for then all ties between her and the village of her father seem to be broken. I shall never forget the horror displayed by a native who complained that he was starving, when I suggested that he should slaughter a cow; such a thing is inconceivable to the Mkamba; bulls may on occasion be sacrificed, but cows never; neither will he ever think of selling a cow, even if he is on the verge of starvation. The manner in which a Mkamba regards his cattle is thus more in the light of family heirlooms, they also tell the position of the family and are a record of its past. It is conceivable, then, what a calamity cattle disease is to them. I know an old man whose cattle were dying of disease, and the sight was so heartrending to him that he could not stand it and went to stay elsewhere until the calamity should be past. As a matter of fact, Kitui was until quite lately very free of disease, but about twenty years ago tens of thousands died of Rinderpest, and the Akamba say that since then they are poor. This is, however, not the case: compared with many tribes they are very rich. It is difficult to say how many head a rich Mkamba will have, partly because he has no idea of their numbers himself, and partly because of the practice of keeping portions of the herd in various parts of the country. This is done largely because the water supply may be insufficient, but also because if any misfortune arises, such as sickness in the herd or raids by enemies, the whole herd cannot be lost. The welfare of the cattle is thus a matter of great concern to the Akamba, wherefore there are several rules to be regarded, to break which brings misfortune. Thus one of the strictest rules forbids a man to cohabit with a woman while the cattle are out grazing. They may also never be counted, and therefore the owner will merely cast his eye over the herd when it returns to the village, to detect if a beast

is missing. Branding of cattle is done in various patterns by burning, sometimes lines will be seen drawn from the eye along the flanks to the tail; many natives do not, however, use any brands at all.

The herding is not begun until the sun is well up and the dew dried off the grass. Many of the wealthier Akamba employ Akikuyu for this work as well as for field labour; such employees receive a goat per month in payment. The fact that the Akikuyu take employment from the Akamba accounts largely for the contempt the Akamba have for this tribe.

Milking is done only by the women; the milk is used for making ghee, and is largely drunk also.

For sickness of people a very favourite medicine is the blood of a cow, which is extracted from the jugular vein by shooting a small chisel-shaped arrow into the vein, which is tightly bound up with cord.

Less valuable than the cattle are, of course, the sheep and goats, of which about thirty are reckoned as equivalent to a cow. The Akamba are very rich in this kind of stock also, their main use is for presents and sacrifices. The skins are used for the making of sandals, sleeping mats, and other skin articles. But perhaps their main use to the Akamba nowadays is for trading. Large goats such as are required for many of the sacrifices are called "Masai"; the term is also applied to large bulls.

Poultry are kept in all the villages; the Akamba do not eat the eggs, but fowls are very often used for minor sacrifices and presents.

Honey gathering is generally practised among the Akamba. A certain amount is collected from the wild bees in tree trunks, but by far the greatest quantities are obtained from the honey hives, which are put into the trees. They are often kept at great distances from the village. Baobab trees are particularly selected for this purpose, and are climbed by means of stakes driven into the tree trunk. The hive is made of a section of a tree trunk hollowed out with a long chisel; at each end it is closed by a slab of wood. The honey is found ready after the rains, and the bees are then driven out at night by smoking them out. The honey barrels are always marked with the mark of the clan (not of the family), and their possession is most sacred. Often they are further protected by a spell laid at the tree, which causes a thief to be bitten by snakes on descending from the tree. Formerly, if a man was caught three times stealing hives he was killed: to be found in the tree was regarded as equivalent to having committed the theft. It is only quite latterly that I have heard complaints of such thefts being committed. The combs taken from the hive are squeezed by hand to extract the honey. Formerly the wax was thrown away, but now it is sold, and forms an important article of trade for the natives. The honey is not used much for eating, but is destined almost entirely to be made into the much loved honey beer, "Njoki." But for this I am afraid that the Akamba would not bother much about the honey collecting. The honey is fermented by putting the Loofa fruit into it. The brew thus made has not an unpleasant taste, and would not be a very intoxicating

liquor if it were not drunk in such remarkable quantities. When a Mkamba is about to have a beer-drink he will call a few select friends, and the drinking does not cease until all the beer is finished. Apart from the unceasing buzz of conversation proceeding from the hut, one can always tell when there is a beer-drink going on by the number of people seen sitting around the village: men from far and near get the news and come in the hopes of being offered a drink; I have known them to wait about in this happy expectation from sunrise to sunset. Mostly the beer-drinks end in everybody being wildly intoxicated, and then as often as not a fierce fight ensues, and it is on such occasions that perhaps 90 per cent. of the murders committed occur.

Other intoxicating drinks are made of sugar cane, palm sap, and bananas, or if none of these is to be had "Mawe" may be used. Sugar cane is not largely grown in Kitui, but where there is an unusually damp spot it is generally found.

Among the Akamba the smith does not appear to occupy the peculiar position he holds among certain other tribes. Here he is not required for the making of spears and swords and therefore his duties are not all important to the tribe. As a matter of fact most Akamba can do their own smith's work, but there are certain men called "Mutui" whose daily work it is to fashion knives, axes and other metal implements. A forge is made of a hollow in the ground in which charcoal is put; bellows are made of two leather bags which end in a wooden mouthpiece and this is introduced into a clay funnel leading into the forge. At the top the leather bags are fitted with wooden rims, and a man, or usually a boy, sitting on the ground, takes a bag in each hand, holding them by the rims, and lifting them up and down does the blowing.

Most of the arrow heads, etc., are now made of European iron wire, and another great source for metal is the railway, from which quantities of iron parts are stolen and even bolts extracted from the lines. Formerly, however, and it may still be even now, iron was obtained from the hæmatite found in the dry river beds.

Some ornaments may require the work of a smith, but most are made by the wearers themselves or by men who do a small trade by selling them to others. The thinness of wire required for much of the finer work is not to be obtained from the traders, probably because it is too expensive for the native to buy. The Akamba, however, draw the wire fine themselves by hammering the end down and passing it through a fine hole in a small steel plate; the wire is passed round a tree and while one man pulls the one end the other draws the steel plate along the wire. For making the links of chains a most ingenious device is used. The wire is first wound into a long spiral. To do this a small block of wood or rhinoceros hide, attached to a stick at one end, has a peg passed through a hole at the other end. This clamps a straight bit of steel wire and the wire to be wound is passed through the same hole and likewise held by the peg. By holding this wire and turning the block round and round, the wire is twisted round the straight steel wire and thus a spiral is obtained. This is much used for wearing round the body, but to be made

into links it is cut into a number of parts each comprised of two twists. By then inserting a strong needle on each side and bending the twists outwards the link is complete and has only to be pinched with a pair of tweezers when making the chain. It is said that during the famine the Akamba used to obtain a load of food in Kikuyu for a chain.

The arrows are made triangle shaped with a barb on each side at the end of a short iron shaft. The head bears the owner's mark cut into the metal. The iron shaft is fitted into a short wooden socket and this is fitted on to the main shaft and bound round with the skin of porcupine quills. The object of this device is that, if an attempt is made to pull the arrow out of a wound, only the shaft will be pulled away while the head will remain in the wound. At the other end the arrow has a notch and is feathered with three feathers. This part as well as the tip of the shaft are generally bound with giraffe hair. As a rule each man has a particular length and weight of arrow which suits him. The accuracy with which a man will make a number of arrows each exactly like the other is remarkable, considering that he has only a knife to work with; to convert the knife into a simple sort of plane it is pierced through a thin piece of wood. To smooth the surface of the arrow a certain leaf is used, which, by reason of its roughness, acts as sandpaper. The bow is fashioned by the same simple means: it is chosen from several sorts of wood and to make it pliable it is soaked in fat and heated over a fire. For hunting big game a heavier bow and arrow are used. For shooting birds a small arrow with a barb like a nail is used. The bow is strung with cord made of sinew, for which the sinew taken from the leg of a giraffe is preferred; the sinew is well dried and then shredded into small threads which are twisted together; this gives an excessively strong cord.

The arrows are thickly covered with poison, not on the point so much as on the metal shaft. To preserve the poison and to protect the one carrying the arrows, they are bound round the poisoned part with fine goat skin strips. The poison is extremely virulent: it is made from the wood of the *Akokanthura Schimperii* tree: by boiling it down only a thick glutinous mass is left. When fresh it is said to kill a man almost instantaneously; it seems to have a paralysing effect upon the brain and for this reason I suppose it works more quickly on animals, whose life is very much dependent on the brain; thus I am told that if the poison kills an insect in five minutes it will kill a man in one minute; the natives also say that, for instance, a lion is rendered immediately powerless on being shot by a poisoned arrow. If, however, the poison is not very fresh, it is very much less effective, also there are different qualities of it, the best being that got from the coast; the poison is not found much in Kitui and most of it is imported. The native cure against it is to eat the poison, and I have heard of people being cured who did this, but I cannot say if it was due to the treatment entirely.

When not in use the arrows are carried in a quiver made of leather; occasionally one sees them made of hollowed branches of palm tree and I believe that formerly these were very commonly used.

A Mkamba can shoot an arrow up to about 300 yards, but his marksmanship even at a close distance is surprisingly poor: I have seen men who are reckoned to be good shots unable to hit a six inch mark at forty paces. The natives themselves say that formerly they used to be much better shots, and that all those who shoot are hunters only. This is possibly true, since they rarely have occasion to use their arms now, and the method of hunting does not necessitate good marksmanship.

The Akamba hunt very little for food, but formerly elephant hunting was a great occupation for the object of getting ivory. It is said that large caravans numbering several hundreds of Akamba used to go down to the coast with ivory to trade. Natives still know the roads these caravans used to follow to Kismayu and elsewhere, but they are now all overgrown.

When hunting elephant the Akamba go in large numbers, and if they come upon a herd they will kill every animal in it. In doing this they surround the herd, and one after the other they run up to within a short distance of the elephants, shooting their arrows and retiring quickly while others come up from another side. The arrow, being shot at a very short distance, penetrates deep into the flesh. I was told by an old hunter that he could shoot his arrow in up to the feathers; whether this is true I cannot say, but if shot by a powerful man the arrow certainly has a considerable velocity. In this way, therefore, there is no aim needed, the distance is nothing and the mark is big, for it does not matter where a poisoned arrow hits, the effect is the same.

Much as elephant hunting is a thing of the past, so also all fighting has ceased and the Mkamba of to-day is all else but capable or desirous of fighting. It seems that the Kikamba manner of fighting was never very desperate. The Theraka say that they were women in war, but very dangerous in thick bush; but among themselves warfare seems to have consisted largely of much rushing about and shouting until one side or the other was terrified and ran away. This also is told by a missionary who witnessed such warfare in former times. Natives have told me that certain people had medicine which they smeared between their thumb and forefinger, the merit of which was that it made it impossible for them to err in their aim, and that such people were often not allowed to go to war because of the destruction that they did. This somewhat comic view of warfare shows that the object of the fighting was not so much the destruction of the enemy, but when, despite this, it is certain that numbers were killed, this is only to be explained by the fact that the fighting went on continuously. When going out to fight, the Akamba used a short flute called "Ngoli," a small horn about three inches in length, which is blown much as we should blow into the hollow of a key. The Ngoli has a very shrill and discordant note, well suited for its purpose; it was also used, as it is now still, for collecting the people. Apparently it was very common for the women to go out to view the fighting from a distance.

Of arts, such as basket-making and decorating with dyes and colours, the Akamba appear to know nothing. A very fine red colour is obtained from certain

berries, and used sometimes to dye skins for knife sheaths. In their pottery and wood work one remarks a total absence of any suggestion of art. I have seen a few gourds ornamented with designs burned on them, but these are so very rare that I am inclined to think that they are not original Kikamba work. Peculiar to them are only the baskets, called "chondo," I think; they are made of string, which is obtained from baobab tree bark; for this only the young baobab trees are suited.

I have now spoken of the village and its inmates, together with their interests and occupations. As a human habitation the village has very little of which to boast, but it is essentially the Mkamba's castle. We at least see the village very much from the Thome only; of all that it contains and as to the Mkamba we do not know much. Yet this would be its most interesting side, for it takes the place of village and State: it is the birth and burial place of its inhabitants; their interests go practically not beyond its immediate surroundings. It is to be regretted that this side of primitive life is not more accessible to us, and whether it ever will be is much to be doubted, for when the native admits us to it he will himself try with semi-civilized superiority to forget it.

The old men and the women are always much attached to their village, and nothing but necessity will induce them to trek elsewhere. And yet most of the elders have moved their villages time out of number; I could count numberless villages which have moved within the last two years, in fact there is a constant moving about of the Akamba. But always there is a good reason: it may be lack of water, but more often the place has become unlucky: deaths in the family, sickness among them or their cattle, or absence of children; any of these misfortunes will induce the Mtumia to have recourse to the wisdom of the medicine man, and his verdict will generally be that his village is unlucky, the haunt, perhaps, of mischievous spirits, and then the family moves elsewhere. If they do not move far they will often take the grass and sticks of the old huts, or may even transport the frameworks whole, but if this is not done the entrance is closed, the village is left standing as it is, and in perhaps six months it is a mouldering heap of grass and sticks. After the next rains the bush begins to creep over it, and in a very short time it is lost out of sight. The only evidence of its existence is then a broken pot or a hollow grinding stone lying in the bush. Such evidences can be seen everywhere, and denote that parts which are now completely destitute of habitations were once well populated.

THE DANCE.

The dance (Kikamba "Wathi") is a never failing source of entertainment to the Anake and girls; as a rule when a European travels in Kitui he will be honoured at every camp with these, and very often I have seen young men and girls follow my caravan for days for this purpose; in fact some of the young men are said to simply wander round the country in search of dances. The amusement is a harmless one, excepting in so far as it affects the intellectual life of the Mkamba.

There are said to be five different kinds of dances; but only a trained eye, I think, could detect more than two main classes, one being a simple rhythmical movement of the body accompanied by drumming and singing, the other a wilder performance of which the main feature is the beating of time with strings of bells wound round the legs. The details, however, of the dance vary constantly and are very much subject to the whims of fashion. But in all dances the girl's part seems not to vary. This consists of a circular rolling of the shoulders in time with the dancing of the men. The formal procedure is simple and monotonous. The dance is begun by the young men standing in line while the girls approach and point to the particular one each one chooses as her partner; in doing this they must approach very slowly, any haste is a breach of good manners. This done, the girls stand in line, each one with her arms round her neighbour's waist, and the young men approach; previous to this some of them will be seen walking up and down singing boastful phrases such as "I am a lion," "I am a leopard," and so forth, whereby the girls are supposed to be impressed by their boldness and courage. Each man then standing before his partner rests his cheek against hers and the "Ngui" commences his song. This figure may last half an hour and when ended the drums strike up and the dancing commences, consisting of a rhythmical swaying of the body and shaking of the shoulders; the girls do not join in the singing. As a rule there are twice as many men as girls and those that have no partners stand behind and take part in the singing and dancing. The dancing grows furious at times, individual dancers perform capers of their own up and down the line, in which they show a remarkable capability for maintaining the general time of the dance. At intervals the dancers retire and the drummers advance, beating their drums furiously. The drummers often indulge in the most brazen flirtations to which their talent seems to entitle them. After a while all retire, partners are chosen again and the performance recommences; this goes on hour after hour with untiring vigour. In the eastern parts bells are almost always used. They are made of tin folded over and filled with bits of metal or stone. Two years ago only a few used to be worn round the ankles, but now the whole leg from the ankle to the thigh is covered with them; latterly I have noticed that whole biscuit or tea tins are attached to the string and filled with stones.

The drums used are hollowed tree trunks covered with thin skin, snake skins are particularly used; the drum is some four feet in length, but may be as much as six feet long; they are slung from the shoulder and held between the knees; the beating is done with one hand and with the other a leather strap is used. If the dancing goes on for long a fire is lit and the skins heated to tighten them and improve the tone.

The Wathi dress is both simple and elaborate, that is to say there is little covering and much decoration; for the girls it is very bad form to dance with a blanket. The young men hang about themselves every trinket and article they possess. The head is smeared with red earth and fat and cocks' feathers are stuck in the hair while the front of the head is adorned with a long streamer made of

several feathers spliced into one another. Of late, also, hats of Colibus monkey fur have come into fashion and whisks of the same fur. The latter are carried in their hands; small bows bound with giraffe hair and wire or throwing clubs decorated in the same way are also brought to the dance; failing any of these the men always have sticks or long thin wands. Unfortunately all this finery is often spoilt nowadays by tawdry European articles such as cheap umbrellas of the most gampish sort, as often as not made still more ludicrous by the addition of an ostrich feather fitted on to the point. Cheap mirrors, empty jam pots, or hats made of bits of paper are also much prized; I heard once of a man who was particularly proud of a Court Summons form which he had converted into a hat. In the eastern parts the girls wear bead collars, which apparently were used all over but have been dropped in many parts, according to the wearers, because they rub the shoulders sore. Formerly it was probably the custom to come to the dance fully armed: very often one now sees poisoned arrows carried by the Anake, a practice which is a very dangerous one, as in the general commotion accidents may easily occur which can result in death.

There is a very marked difference between the dances performed by the people around Kitui Station and those of the rest of the district. The former are even more monotonous and are made hideous by the form of song, which consists in a very unmelodious croaking in the throat.

The life and soul of the dance is the "Ngui." He is the solo singer and conductor of the dance, he directs the various movements of the dancers and above all he is the composer of the Wathi song. In consequence of these talents he is a person held much in esteem, and I have often noticed that if an "Ngui" is in a caravan he generally becomes the head man.

As a general rule the Ngui makes up a new song for every new moon and this lasts until the next moon. The favourite time for dancing is at night when there is a bright moon. It may, however, happen that particular circumstances give the composer material for a new song, thus the arrival of a European is generally an occasion for the Ngui to show his talent, and then the European may have the pleasure of hearing some peculiarity of his commented on in song for several hours together. The song is rarely very full of meaning and in fact often seems so void of meaning that it is difficult to appreciate. Thus I remember some old women singing for three hours together "the bowl is full": mostly, however, the songs give characteristic examples of native thought and ideas. I give here two which were sung in my camp, translated literally as they were sung:—

1.

The European has come and found much ivory;
He has seen that the Akamba are fools
And has taken all the ivory to the boma.
Jaheja Wakathuli.

2.

Wakathuli, wa Tsjombua, Musioka
I will not stand with the people of the "Office" ;
I will stand near like the "bas" at the station.
One bull will not drive away many bulls ;
Run like elephants to the place where the girls stand.

Jaheja Wakathuli, wa Tsjombua, Musioka Wakathuli, wa Tsjombua, and Musioka were the names of some girls of the district and this refrain was the subject of the chorus.

The first song has reference to some ivory which was confiscated. In the second song "the people of the office" were some of my men, who probably on account of their clothing and superior position were attractive to the girls and therefore unwelcome in the dance to the men.

The "bas" means the train and is, I believe, a corruption of the word passenger (train). Now the Ngui had been to Nairobi and his comparison of himself to the train was, no doubt, a little conceit of superior knowledge. Anyone who sees a train come into a station may be struck with the impression it conveys of an immovable appearance, a moment ago so rapid and living: it stands there ponderous and seemingly rooted to the spot. This, at least, I fancy was what remained in the Ngui's memory and therefore when he wanted to express how immovably he would stand apart, the picture of the train recalled itself to his mind. Such a line of thought is typical of the Mkamba: he is very quick at noting anything characteristic, as is shown from the many quaint names given to Europeans.

The dance is by no means an invariable formality: particular fads come up and last their season, but the above description will give an idea of the general form of dance used.

A separate dance performed by the young men alone is often done as a side show, and in fact whenever a number of young men are together it will not be long before they start dancing.

The old women have a dance of their own which consists of drumming by one of them while the others engage in a competition of the most grotesque wriggling and twisting about. I have noticed that the older the women are the more vigorously they take part in this, and as the main object is to compete until one of them is tired out, I presume that their object is to show that "there is life in the old dog yet." A song is not wanting here either, as a rule the drummeress sings it while the rest join in the chorus, or a man will oblige them by doing the singing.

The old men also have a very stately sort of dance, but the "Nthele" seemed to be debarred from this form of amusement.

There are many other forms and occasions for dancing: it must be remembered that the natives can do no work without its aid; special dances are also used for medical and spiritual purposes, and all these are denoted as "Wathi."

As to the usefulness of the dance, it is of course conducive to an idle existence for the young men; it has, however, this one advantage that, as I firmly believe, the more a young man dances the less he will be addicted to drinking. In a way it is a healthy amusement and preserves, as one might say, a childlike nature in the Mwanake which is always preferable to the roguish tendency which he is only too prone to follow. Conversing with some Anake one day, they said to me, "We who dance do not drink, it is only the Anake, who do not dance, who drink with their fathers."

KIKAMBA LAW.

The laws framed by the people with whom we are dealing form a subject so intimately connected with occurrences of their everyday lives and give such a clear insight into their natures that they should be studied by anyone who has to deal with them.

First of all as to those in whose hands the law lies, one might on first acquaintance with the Akamba think it impossible that there is any fixed law, or if there is, one might ask oneself of what account it is, since one could find no person such as a chief who could exercise it. The rulership of a chief has this advantage that it enforces great discipline, but it has the great drawback that it is left to one man who not only may abuse it but whose position is, in savage times, perhaps, always precarious. Very different to such a system is that of the Akamba. Here the administration of the law lies in the hands of a council whose members are those of the degree of "Nzama," or rather those eligible as members of the council are elders of Nzama. Originally the Nzama was not a "duly appointed" council which met regularly under any authority, but a man having a complaint to make would call together the elders of Nzama and lay his case before them, but naturally the elders within one district would meet pretty regularly and try the cases of their locality. How far they could extend their authority beyond a very limited district is doubtful now; if there was hostility between the districts of accuser and accused legal proceedings would be useless, and on the other hand, doubtless many of the former feuds arose just where one party refused to acknowledge all legal authority; in either case redress would be sought by force of arms.

The Nzama now usually meets in or near the village of a Government chief. The elders sit out of hearing of the parties and their witnesses, who appear separately before them. If the claim is for dowry or other debts the claimant will bring a bundle of sticks before the Nzama and explain his claim by signifying what each stick represents, after which he retires and the defendant appears and states by means of the same sticks what he admits. The sticks in regard to which there is no dispute are set aside and the elders then retain only those representing the property in dispute. Of the elders there is one chosen as the spokesman, and he conducts the trial, puts questions and explains the case to the other members. When all have then been fully heard, "Nzama" is pronounced and a certain number

of the elders go aside and discuss the matter; this is always done in low tones: wherefore the council is called "Nzama," which means a secret. On returning the elders give their decision; it will very rarely be an absolute decision, for unless it is a well-known claim the elders will not commit themselves by accepting the statements of any number of witnesses, knowing well that these are not to be depended upon, and therefore a very usual decision is that both parties shall submit to some minor ordeal or shall take the oath of "Kithito." Of the former there are several, of which the most usual is the licking of a heated knife blade; latterly, however, the elders have come to recognize that the judgment of this ordeal is not always above suspicion. The case may still not be settled by the minor ordeal, for if one party then demands resort to Kithito the elders will call upon the other to comply with the demand.

Strange to say this final ordeal is often put off to the very last, and may, in many cases be performed long after the original parties are dead and gone. The Kithito is an article endowed with mysterious powers whereby if a man swear falsely he will die in a given time. It varies very much in composition and effect; it may be a concoction of all sorts of odds and ends in which hyæna dung is very frequently found, or it may be simply an empty horn; it may kill the one who offends against it in a year, in a month, or in a few days; so also it may bring death to the offender alone or to his whole family; I am told that there are Kithitos which affect even the whole clan. This article is usually fatal to touch excepting to its owner. The manner of taking the oath is generally as follows: The person about to swear by it stands before it, the Kithito being surrounded with stones, seven to eleven in number. His heels must rest on two of the stones and in his hand he holds a twig. Facing the Kithito, he then says what he maintains to be the truth; as he speaks he taps the Kithito with the twig, and finally taps three times saying, "Listen well, if I tell a lie let the Kithito eat me." Upon this oath being taken nothing is decided in the case, for if the man dies the decision is thereby arrived at; if not, then nothing can be proved against him. Thus in the majority of cases the elders need give no decision excepting that the ordeal shall be undergone, or if one party refuse to do so he thereby admits himself to be in the wrong and the case is decided. One of the primary objects of the Nzama, as well as of Kithito, is to avoid laying the responsibility of a decision on anyone in particular. A Mkamba dreads being charged with any responsibility, which is perhaps a reminiscence of old days when no one knew how long existing institutions would last.

Despite the awful power of the Kithito, a man may as often as not swear falsely by it, but in such cases when he falls ill the only means to escape death is to return any property wrongly obtained in consequence of the oath being falsely taken. Thus if a man claims a cow and swears falsely that he has a right to it and thereby obtains the cow, he will, any time he falls sick, return the cow and request the owner to cure him. I have, however, heard the oath taken with the additional clause that if either party does fall sick the other shall not cure him, or if he does the bane of the Kithito shall fall upon him. When this is added, the oath, of

course, becomes a powerful means to bring the truth to light. The real power of the Kithito lies, of course, in the fact that as a rule a man will not risk the ordeal, and although to-day, particularly in the more enlightened parts, many have somewhat lost the fear of its vengeance, I am convinced that no man will lightly test its power.

Offences are dealt with under Kikamba law in the three following ways: (1) fine; (2) compensation; (3) sentence of death.

As regards the first, so far as I know it only applies to the offence of theft, for which a fine of seven times the value of the article stolen can be imposed. Whatever else may be demanded in payment is really for compensation or as a sacrifice.

At first sight, compensation might be thought to be reckoned haphazard according to the whim of the elders, but this is not the case. I asked some elders once what compensation would be required in the case of a man losing both legs by the act of another. They stated that they had never heard of such a case, but they were in no doubt as to what the offender should pay. They reasoned that a man who had lost both legs would be useless: he would cease to be a man as they said, and therefore the only proper compensation would be full blood money as it is in the case of mutilation. Other injuries, such as the loss of one leg, are reckoned at one bull and one cow, the same as in the case of the loss of one eye. Lesser injuries, as, for instance, loss of a finger, one bull and one goat; two fingers, two bulls and a goat, and so on. Accidental killing is compensated with seven cows and one bull for a man, and four cows and one bull for a woman, but other offences are compensated the same, whether done intentionally or not. Compensation for death or injuries done to children is the same as for adults, according to the sex. The bull or goat, which is always part of the compensation, is usually intended to be slaughtered as a sacrifice. The object of this will be most clearly understood from the manner in which blood money is paid. The compensation for murder of a man is thirteen cows, two bulls and one goat; for a woman, it is six cows, two bulls and one goat. Formerly it was eleven cows, and in Mumoni it is still only twelve. Of the animals thus paid, one cow, one bull and the goat are intended for the following ceremony. The three animals must be paid first and are taken to the village of the murdered man, where the elders collect. At about five o'clock in the evening the goat is killed, and from the throat fourteen pieces of meat are cut, of which seven are given to the deceased's wife and seven to his brother; they are put into their mouths by an elder, who picks the pieces of meat up by spitting them on a wooden pin. At about dark all the elders leave the village, and go some little distance away, while the woman and her brother-in-law go into the hut, where they must have connection. After this, they call the elders back, and the bull is then killed. Half the carcase of the bull and of the goat is given to the elders and half to the family of the deceased. The meat of both beasts must be eaten that night and nothing must be left nor may the bones be broken or cut.

In the same night the bones must be carried away by the elders and thrown far away in the bush. The skins likewise must not be left in the village, but are taken away by the elders and may be used by these for any purpose, provided that they are not elders of the same clan as the deceased. The cow is left in the village and becomes the property of the woman, but she may not dispose of it in any way.

When this ceremony has been performed, the murderer has to collect the balance of the blood money, which he will do by going round to various members of his clan and begging from them whatever he is unable to pay himself. Among the cattle brought there must be one bull, and when all are got together and brought to the village, the elders collect there; besides these come members of the family and clan, as also strangers from far and near. The bull is then slaughtered and eaten by the whole assembly; the skin is cut up into small strips of which each person takes one piece. After this comes the division of the cattle as follows: if there is a man of the same family present, he gets one cow and gives a bull in exchange; the village of the murdered man's mother gets a cow and gives a bull, likewise if there is a half-brother of the deceased who does not live at his village, he will get a cow and give a bull in exchange; if there is a village of the same clan close by they also are given a cow and return a bull. All these cows may not be sold or disposed of; should this be done, the owner has to pay another cow to the family.

The remainder of the cattle are the property of the brother and wife of the deceased.

It will be seen from this that the murder is regarded as no private offence against an individual: all the next of kin receive a portion of the blood money and the offence is, therefore, to be considered as one committed primarily against the family to compensate for the loss of one of its members.

The first ceremony spoken of is called "Etumo" and must be paid under all circumstances. If this is not done the peculiar consequence is that every member of the murderer's family, whenever he is embroiled in a fight, whether in warfare or in a slight quarrel, will kill his opponent, and on the other hand the members of the murdered man's family will under like circumstances be killed. So fatal is the non-observance of the Etumo ceremony that it must be performed whether the killing was done accidentally or not and, further, when a man's son was killed by strangers in a foreign country, even he had to kill a goat and perform a like ceremony to ward off evil. In former times, when a man was killed in a fight it came to be considered only fair that his brother should waylay the murderer or another member of that family and kill him. In such case the two deaths were regarded as equivalent to payment of compensation on both sides, but nevertheless the two families had to exchange the "Etumo" and had both to perform the above-mentioned ceremony. It will be seen how necessary the "Etumo" is to the safety of both families: without this "their hands are fierce," as they say. The feud is sure to continue and when hostilities break out again, there is on the one

side the fierce hand while the other will be weakhearted by reason of the fate which hangs over him, and it will not be surprising, therefore, if the baneful results of such non-observance of the rites are realized.

The observance of the Etumo shows that the crime of murder leaves the dregs of its evil behind it. Here vengeance such as hanging is of no avail: it is probably only adding evil to evil. Compensation would therefore be wrongly described as a fine imposed; it is an atonement and also a sacrifice which is necessary to remove the evil effects of the crime. It might seem strange that the effect of an omission in this respect should result in the evil abiding distinctly more with the aggrieved party than with the transgressors, but the idea is, I think, quite in accordance with the native mode of thought. There is left, so to speak, a death-dealing spirit, and it is quite a logical supposition that when nothing is done to curb this power it will continue as before, death-bringing to those with whom it began thus, and death-dealing by those who first caused death. Any other view could only spring from ideas of justice, but the Mkamba reckons on no justice from supernatural powers, and although the Mkamba may not ascribe the results to such powers or know from whence they come, it can hardly be doubted that the working of spirits is here surmised. It should be noted that in every payment of compensation there is a greater or lesser sacrifice included, and it may be assumed that what applies to the sacrifice in the case of murder applies in a lesser degree in regard to all offences.

With regard to the third punishment, that of death, this was inflicted only by public consent in the following cases: for habitual robbery or theft of honey barrels, for incorrigible witches, repeated murders and in fact in the case of a man who was recognized as a public danger. The punishment was called "Kingolle." If a number of persons brought complaints before the elders against one man and no redress could be obtained from him, the elders would debate as to how to act. If they decided for Kingolle they took no further part in the matter but called in elders of Nzama from other districts, if possible from remoter parts of the country, and laid the matter before them. These elders then went apart into the thickest bush to hear the complaints, whereupon if they considered them genuine they would require them to state their cases again on the oath of Kithito. This done the brother or father of the accused was called and asked if he agreed to the sentence of Kingolle being carried out against the offender. If he refused he was told to pay for all that his relative had done, and to swear by Kithito that he would not repeat his offences. If he agreed to the decision everybody in the district would arm themselves and set out in a body to hunt the offender down. When found, the first to attack him was his brother, who threw a little earth at him and then the rest attacked and killed him with any weapon they had. He was expected to defend himself, and if he killed anybody in so doing there was no claim upon his relations for blood money, nor could his relations claim anything from anyone for his death. Nowadays when a native council cannot settle a dispute and the case has to be referred to a District Court, the natives say it is Kingolle, because, as they say, it is no one's decision, it is the Government. Here, we see, again, that the

great aim is to remove the blame from the individual. The Kingolle was nobody's work: it was done by common consent, and no one could be blamed; if there was any responsibility it rested with the brother or father of the offender, who alone had the right to sentence him, because to them the blood money would be due. This crude form of a death sentence seems to be so ingeniously devised that one may scarcely credit it being as described, nor do I mean to say that it was always so carried out; in fact, the only case of Kingolle which has come within my experience was not; but nevertheless it is certain that, as above described, it was so intended to be inflicted by the Akamba, and so it would be in most cases, for an omission of the main requirements of the procedure would bring the responsibility of the act upon the slayers.

A modified form of the Kingolle existed in the case of a man refusing to share his father's property with his brothers. In such case the Kingolle contented itself with burning the offender's village and taking the cattle by force; as a warning they first sent a messenger with a fire stick, and if the man sent the cattle he was left unmolested.

Accidental death is called "Mbanga," the acts of lunatics, children, and persons under the influence of liquor are not reckoned as cases of Mbanga, but if such persons injure anybody of their family the compensation is generally reduced to the half. In the case of the former two of course the compensation has to be paid by their relatives and, on the whole, when a man is unable to pay, out of poverty for instance, his relatives are held liable for the payment. A debt is always held to be payable by the relatives of a man, no matter how long after his death. A man is apparently entitled to recover a claim by seizing his debtor's property; some say that he may take a wife and her children, but at a meeting of a Nzama it was most distinctly held that this could not be done. In any case, a man may not do anything until his claim has been made good before the elders. Frequently debts are settled by the creditor receiving a daughter from the debtor.

When claiming a debt the claimant nearly always has to pay something to obtain his property; often if he claims a cow he has to give one of the calves, and at least he will be expected to give presents of honey beer. This, curious as it may appear to us, is only justifiable for the following reason: a Mkamba is very fond of letting a debt stand over for an indefinite period, because during the whole of that time the responsibility in regard to such property rests with the debtor. Thus, if A owes B a cow, and this is paid after ten years, during all that time the cow might have died with A as well as with B, but eventually B has to pay it, and A is sure of his cow and its calves, or the number of calves which it would be expected to have despite cattle disease or any other risks, and consequently what A pays B in order to redeem his cow is, as it were, payment for the risks incurred by B. If, however, A places a cow with B, and that cow dies of a natural cause, B is absolved of all claim upon himself, provided he has returned A the skin and the meat; if he cannot return the meat he must give two goats in its place. This also can be done by a father if one of the cows paid to him in dowry for his daughter

should die, in which case he may either claim another cow or leave it, and in the event of his having to return the dowry he need not give another in place of the one which died. This latter provision emphasises the fact that dowry is to be regarded almost as a pledge for a daughter: the cattle should not be sold, and in every claim for dowry, strictly speaking, the claim concerns only the identical stock given by the husband, the daughter can always be returned and taken back in exchange for these cattle: she is not strictly taken as being equivalent to the value of the cattle, but pledged with the stock paid.

The view in which the Akamba regard offences is of course somewhat different to that held by us. The offences of rape and adultery are instances of this. If upon such an offence there is issue, the child goes to the father or husband of its mother, as the case may be, and the woman's seducer pays one bull and one goat, but should the child die at birth, the compensation is increased to two bulls and two goats; if the woman should die in childbirth, full blood money is required, excepting in Mumoni, where only the amount of the dowry given for the woman is paid. There is no difference made between adultery and rape, excepting that for the latter offence the bull and goat due must be large ones. A case came to my notice where a man had induced a married woman to go to his village for the purpose of having connection with her; the woman fell ill at his village and died there. The husband claimed full blood money from the man, and although finally this was reduced to compensation, as for accidental death, by the elders, opinions were very much divided on the point. In another case, a woman while going to fetch some honey beer for a man fell down and hurt herself; the man was fined two goats as compensation by a large council of elders. Thus, where we should see no offence committed, the Mkamba often holds a man responsible for results which were in no way intended by him. The real explanation of this is, I think, that the native law does not regard offences so much from a point of view of the intentions of the offender as from results to the other party. The essence of all offences under our laws is the intention, but by civil law we can claim damages irrespective of this, and if therefore we regard all native law as civil, which in fact it is, we find that the difference is not so great. The distinction, however, which we make between criminal and civil law often confuses them and clashes with their ideas.

The laws of inheritance are somewhat complicated, for one reason because the natives denote the eldest son as sole inheritor of his father's property, but as a matter of fact he is so only in name, for the stock falls to him to divide with his brothers. During his lifetime a man so divides his stock that he allots a portion to each of his wives. On his death the portion of each wife goes to her son or sons, but a small part of it also goes to the eldest son who, in addition, gets the whole of his mother's portion, which is of course larger than those of the other women, because she is the big wife. If the cattle left are not numerous enough to buy a wife for each son they are left with the eldest son until the increase suffices for the purchase of a wife for him. When the increase is again large enough it is given to the second son to buy a wife, and so on until each has a wife, after which it is divided in

proportion as if the whole stock and its increase had been originally left by the father; if it is then found that the eldest son has got too little, the others owe him the balance. Until then the eldest son may not appropriate to his own use any of the stock. Wives are inherited by the eldest brother and son, the brother taking the older wives. They may not be sold to another man, but may be given to a man to live with, in which case, however, any children the woman may have are the property of the son or brother, as the case may be. Should, however, the woman of her own accord go to a third man, then dowry may be claimed from him. Illegitimate children are not regarded as a disgrace, but are taken into the family and regarded the same as other children with the same rights of inheritance.

Disputes regarding inheritances are not common. Often the whole family and members of the clan are called in to see fair play, and in the case of stock it is usual for an uncle at any rate to superintend the division. Very often, however, it is difficult for the sons themselves to say how the property should be divided, and in such case they will call in a number of elders to assist them, for which they are given a bull.

By far the most common disputes are those regarding marriage dowries when a father takes back his daughter, or she runs away. In such cases a man can take two courses: either he can claim back all dowry paid, with its increase, and also all presents made at the time of purchase, or he can drop his claim to this and retain the children, in which case he can also claim all children the woman may have by a later husband. In such a case it seems pretty clear that the woman is not regarded as legally married, or belonging to the man she has gone to, for if she dies at the latter's village, or if any of the children die there, the man has to pay full blood money to the first husband. The fact is, that so long as a woman is not properly bought she is not married, and thus it is that the husband, by refusing to accept payment for her, can prohibit her ever marrying again. These rules have been greatly neglected of late by the Akamba themselves, and husbands have only been awarded the actual number of cattle paid. If the old rules were upheld it would be a matter for greater consideration to take a wife away than it has become, for either the new husband will have to pay a very large dowry indeed, or he will not get the woman's children, which is such a serious objection that a man would rarely desire to have the woman. On the other hand, the claims in such cases become very complicated, because both the original stock and its increase may have got into the possession of other people, or some may have died, etc., etc., all of which will lead to never-ending litigation. In the ordinary course of events, when a woman leaves her husband it is merely a matter of return of dowry, but if she be pregnant at the time, no dowry is returned until she has given birth, for the following reasons. If the woman and child survive the birth the dowry is returned in full, but if the child should die at birth the husband pays the father of the woman one large bull and one goat, and receives dowry in full. If dowry was paid in full it is returned in full, even if the woman dies in childbirth, but if it was only paid in part the husband receives nothing excepting a calf or one of the cows, which he must beg of

the father with presents of honey beer. Murder is another subject for endless legal disputes, not that downright murder is often disputed, but because that which constitutes murder is so very vague. Whenever a man dies, a cause for his death is sought, and as often as not any little hurt done to him, no matter how long ago, will be held to be the cause; the possibility of getting blood money encourages his relations to convince themselves that such is the case, and then they enter upon endless disputes as to whether the injury was committed by so-and-so, who may by that time be dead, and if so, whether the injury was the cause of their relative's death. An entire lack of knowledge in such matters will often bring the elders to give a perfectly absurd judgment.

Barring such cases the elders are well capable of judging correctly: they know their own law and, as a rule, have a distinct knowledge that impartiality is required of them, though it must be admitted that when the case is between a man of their district against a stranger they are inclined to be influenced by the old antipathy to strangers.

As far as the law itself is concerned it has two weak points. The first is that it is too lenient. For instance, the punishment for murder is inadequate, because either a man is rich and will not feel the loss of fifteen head of cattle, or if he is poor he will beg the stock from his clan. Of course the law is as it was required to be. The Mkamba is neither grasping, cruel, nor hot tempered, thefts are pretty rare, and murders are nearly all committed in drunken broils. Again, in former times when people lived more isolated, they had not much chance of offending against each other, or if they did, litigation would mostly be a useless means to redress. Thus the law did not need to be harsher than it is. The second weak point is that the law lacked authority, where it failed would be when a man refused to submit to all authority; and then no one could enforce it excepting by Kingolle, and then indeed it became a very powerful authority that he had defied.

A class of offences which seems to have stood outside the law altogether was such as were committed by witchcraft: no man could obtain compensation; here it seems as if he had to content himself with the fact that he contended with higher powers, but in the end the witch, too, could fall under the sentence of Kingolle.

Offences against religion do not come within the law, for those who offend the spirits bring their own punishment upon themselves.

It will be seen that the Kikamba law deals in nothing inhuman or cruel: we can in fact only be struck with the remarkable justice of many of its provisions; even the Kingolle shows a sense of justice that is remarkable in such a primitive race.

Justice and humanity are the two most attractive sides of the Mkamba nature, which go far to make up for many of their shortcomings. It is to these, their best traits, that we must look in every endeavour to raise them to a higher level, and in doing so we should reflect that if we once let the Kikamba law disappear and be forgotten we have allowed them to lose the one creation of their own which they must respect.

OTHER CUSTOMS AND OBSERVANCES OF THE AKAMBA.

The following are miscellaneous customs, observances, or prohibitions among the Akamba; others are inserted elsewhere where it seemed that they were suited to explain the subject with which they were connected.

Birth.—There is not much ceremony connected with the birth of a child. A goat is killed and sacrificed with prayers for the welfare of mother and child. The skin of this goat is not used, and may therefore often be seen hung up in a tree outside the village. Two days after the birth a feast is prepared of "Ogi" for the elders and "Ukali" for the women. On the fourth day the father hangs a chain or other necklace round the child's neck, and that night the father and mother must have connection. The practice seems to vary slightly, in parts the giving of the necklace to the infant does not take place until the eighth day.

The naming of the child is the duty of the old women assisting at the birth. The choice of name is determined by any circumstance of the moment, such as the cry of an animal, the sound of dancing, the weather, etc. To this is added the father's name, before which is inserted "wa" (of), thus: Mbuzia (rhinoceros) wa Wathi (dance). For this reason it is often said that the women give the first name and the men the second. Frequently the grandfather's name is added too. If a man's father dies while he is still young the son will often exchange the second name for that of his uncle. As a general rule all Akamba have two or more names. The birth of twins is very unlucky, and in former times one was thrown into the bush; the natives, however, assure me that this practice ceased before the Government was established. When, however, a cow calves twins it is still more unlucky, and such a cow has to be slaughtered at once together with its calves otherwise nothing but sickness and death occurs in the village. The belief in this is still as strong as of old, and when a Mkamba kills his own cow and its calves one can imagine how dire is the fate he is thereby warding off. I am told that there are a very few people who know how to avoid doing this by the performance of certain rites, but I have not been able to find such a person as yet.

Marriage.—The Mkamba wife is bought and sold, and may even be traded as a piece of goods. Often she is purchased while still a child, and as a general rule without much regard to her own wishes. Hence it is that she does not bind herself to any fidelity, nor is she expected to do so. It is a curious thing that if a girl is averse to a pre-arranged marriage she will, as a rule, not refuse to abide by it, but will go to her elected lord, and after a short time will run away from him. This is particularly the case with young girls married to old men, and nothing will induce them to return then: if force is used they will often take their own lives. There are, however, many cases in which not only is the girl consulted, but it is she who, in fact, commences the negotiations and decides the question. The fact is that at the dances, where it is the girl who chooses her partner, she has the opportunity of declaring her affections by always selecting the same young man,

and if he can pay what the father asks for her the matter is practically settled. In this case the man has first made the arrangements with the girl, after which he will broach the subject to the father by bringing him honey beer. The price of a wife varies from two to five cows besides one bull; a father will generally, of course, take as much as he can get, but three cows and a bull may be taken as an average price. The dowry may be paid at once or in part, or the man may even be allowed to get the girl before he has paid anything. In any case, however, he will be required to make many presents of blankets, knives, and honey beer to the father and other relations, who are, therefore, always bent on prolonging the negotiations as long as possible, always putting him off with hints that another present is desired, until finally he may steal her away at night. Later on the girl's family may regret their greed, for if ever she leaves the husband he will claim every present given, besides the price paid for her: every item has been carefully recorded by a little stick which is added to a bundle treasured up in the hut.

If at last the suitor has obtained the consent of the parents to take his bride, he goes to her village after dark and steals her more or less secretly away, although her parents may be perfectly aware of it. On arrival at his village the girl stands in the "Thome" and will not go farther; the man then calls out his father and mother and asks if there is any ill-luck in the village, and on their reply that there is none he tells the girl to go into the village. She will still refuse to move farther until he says that he has a cow which he will give her. On this she will enter the village and go into his mother's hut, but she will not sit down until the mother bids her do so and gives her a goat for her own. The girl then sits down in the hut and the mother anoints her with fat. The girl sleeps that night and the next in her mother-in-law's hut, but her husband may not cohabit with her. The third day she does the same and on this day her husband takes honey beer to her father; on the fourth day he takes her back to her mother, but returns with her to his own village the same day and may then cohabit with her.

After this there exists a rigid estrangement between the husband and his mother-in-law: they may never meet face to face, or enter a house by the same door; if by chance they meet on the road the son-in-law will pass by in the bush or turn his face away; on a breach of this rule a bull has to be sacrificed. Towards his father-in-law the husband seems to observe a subservient attitude: while the girl never seems to come entirely from under her father's control, the latter may even take her away again so long as he pays back the dowry. I remember rather an amusing case of an old man who did this so often that at last nobody would have his daughter at any price, and when he was once badly in need of property to pay a debt he could not find a suitor for his daughter.

The wife lives in the hut with her grown daughters and small children, the older sons may not sleep in the hut. If one of the daughters is grown up the father can only enter the hut after dark and he will leave it again in the early morning.

By custom every wife should have her own hut, but if a man takes a very

young wife he may put her in the hut of an older wife, usually with the big wife, who is the first woman he has bought; so also if a young man marries he will usually put his wife into the hut of his mother for some time. Unfortunately nowadays the hut tax has played havoc with the old custom and very often two or three women are found in one and the same hut.

A Mkamba may have as many wives as he can afford to buy. A large number of them are a sign of wealth and consequently they bring their husband respect and position: not a few invest all their riches in wives, considering them more profitable than cattle, for they are first and foremost workers, but also they bear him children who, in the case of girls, are valuable assets, and sons are much desired to strengthen the family. A wealthy man may have from six to ten wives, but Mutia of Mumoni, for instance, has nineteen and Kitili of Ikanga has forty-seven, of whom twenty live several days' journey away.

Excepting for the prohibition which forbids a man to marry a girl out of his own clan, there are no restrictions in the choice of a wife. A man is not even debarred from marrying his own father's wives after his death provided that he may not marry his own mother, and that he must obtain her from the elders, who perform the following ceremony. The wood of three trees, called "Movu," "Mulale" and "Mutemma," is pounded in water. The concoction thus made is called "Ngondu," and is used in many ceremonies. An elder carries the Ngondu in a bowl to the door of the woman's hut, followed by the man; here he spills a little on the ground and the man must tread on it with the left foot and rub his right foot with the left. The Ngondu is then carried to the bed in the hut where the woman is. A branch of a tree, called "Mutaa," is then dipped in the Ngondu and both are brushed about the loins with it. After this the two must have connection and they are then married to each other as if they had originally been husband and wife, but when this is not done the man will be stricken with "Makwa." A widowed woman is very rarely, excepting in the case of the big wife, left unmated. If the above marriage is not performed she will generally be given to some stranger to live with: very often women are thus lent to Akikuyu who work for their owners. Spinsters are, so far as I know, non-existent, and bachelors are very rare; I have, in fact, hitherto only heard of one or two in the whole country.

Death.—The ordinary manner of disposing of corpses is to throw them out into the bush; this is as a rule the duty of the elders of "Kisuka," mainly because among the elders they are generally the youngest and best able to carry the body; in deaths from an infectious disease the corpse is dragged out by a cord round the neck. For this work the elders are given a goat, and if the deceased's relatives are too poor or refuse to pay the fee the corpse cannot be disposed of at all, but will be left lying in the hut while the other members of the village will have to move elsewhere. Burial is not favoured and seems to be rather regarded as unlucky. There are, however, two exceptions to this, for the elder of a village, if he was a man of any importance, as also the big wife in the village, are always buried.

In the first case the grave is dug in the cattle kraal (inside the village). A large bull is slaughtered and one half is given to the man's clan while the other half goes to the elders. The grave is marked out by an elder of "Kjau" and those of Kisuka do the digging. The body is laid in the grave with the legs bent backwards from the knees and rests on the right side.

When the big wife of the village dies, her grave is made inside the village enclosure just before the gateway. While this is being done the woman's husband sits on one side of the body and on the other side another of his wives sits. The body is then laid in the grave in the same position as in the first case, but on the left side. The grave is then filled in and the husband must cohabit that night with the wife who sat beside the corpse with him; the same day also the elders are given a large goat, which they must eat without cutting or breaking the bones. On the ninth day the elders return for a feast at which all the daughters of the village who may be married elsewhere must eat with their father.

On every death there is the purification of the village to be observed. On the seventh day a brother of the deceased must cohabit with one of his widows. Within this period no one may have connection with any woman or he will be stricken with "Makwa." The village is then purified, but on the eleventh day the elders are given a sheep and honey beer, and until this is done a daughter of the village who is married at another village may not come to her paternal kraal. This purification takes place on the death of all male adults and on the death of the big wife; when other wives and small children have died, the period for purification required only lasts for three days.

On the death of a woman her hut is closed, for her spirit continues to dwell there; if, however, she has a grown daughter and children they may inhabit the hut. No huts are closed on the death of a husband, for the simple reason that a man has no hut. There is a belief among the Akamba that on the death of a woman her spirit comes at night to cohabit with her husband.

A young man may never sleep, or so much as put his foot, on his mother's bed: were he to do so he would be afflicted by "Makwa." On the death of his father, however, he may do so, but first the elders must have smeared the soles of his feet with Ngundu as well as the bed posts, while the bed itself is sprinkled with the same medicine. So also a man will be afflicted with Makwa if he takes honey out of his deceased father's hives before his uncle has done so; it is also necessary that the uncle should have connection with the widow of the father and the elders must be given beer made of the honey. After that, the hives are the inherited property of the son.

On the death of a child the father is prevented from going to the village of his wife's relatives. The day the child dies the father must have connection with the mother.

Circumcision.—Every Mkamba must be circumcised: there seems to be no explanation of this rite, nor do the natives seem to regard it as a sanitary measure. The operation is performed at various ages, for the ceremonies are held only every

three or four years before the autumn rains, and, therefore, if a boy misses one celebration because, perhaps, his father cannot pay the fees, or on account of sickness, he may be considerably older before another chance presents itself. The celebrations do not, however, take place in the same year all over the country, and, therefore, a boy may sometimes be sent to another district where they are to be held. There are two ages of boys, Kamwana and Kivitse; they do not signify particular ages, but as a general rule the Kamwana has been circumcised, while the Kivitse mostly has not yet undergone the operation. During the time of circumcision and recovery a youth must not be harmed in any way: a person who so much as strikes him with the hand must give a goat as a sacrifice. The celebration of these rites is called "Ndzaiko"; properly speaking there is, of course, only one circumcision, but the Akamba denote two other ceremonies as "Ndzaiko ya nene" (the great circumcision) and "Ndzaiko ya aume" (circumcision of men).

The first named is a feast at which the youths and girls perform dances and are instructed by an old man and woman in the art of criminal cunning. The extent to which this is carried is almost inconceivable; thus I am told that a man who has not been through the Ndzaiko ya nene will not steal, seemingly because he is too unversed in such matters to have a right to steal even from a thief's point of view. It seems scarcely credible that such a celebration should be approved of by a tribe, but this is nothing compared to the absolute depravity of the Ndzaiko ya aume, the details of which are too repulsive to relate. In the main it is the forming of a fellowship among the men and it is said that those who belong to it are capable of forcing others to join.

The exact details of this celebration are not to be ascertained, for the whole is cloaked with so much secrecy that a man only asking about it is fined a bull, and the consternation shown by the elders when they heard that it had become known to Europeans was such that they boldly stated that if they knew who the informer was, they would not rest until they had taken his life. It seems that besides the revolting practices much cruelty and ill-treatment of the novices occurs: there are people who are said to have been thereby crippled for life. In former times, intruders at any of the circumcision rites were severely mishandled or even killed; this is, of course, not the case now, but it is certain that no native would dare to intrude upon the Ndzaiko ya nene, and the elders informed me that even a European would be attacked. Those who have gone through these rites are said to have a password by which they are known to each other; according to two missionaries this is true, but opinions differ as to whether there is only one such password or whether they have different ones in the various districts.

A man who has gone through all three circumcisions attains thereby much honour, and one such man told me that if a man lives with his father and the latter has not these qualifications he will possibly drive his father out of his own village. All this seems so in opposition to what one would expect of the Mkamba, that I have at times been inclined to discredit it.

The facts are, however, so positively corroborated, both by the natives and by missionaries who have a very long experience of the Akamba, that they are not to be doubted, and I can only explain the existence of such celebrations by the following. First the Mkamba, it must be admitted, has a distinct inclination for that which is depraved, and secondly, the natives assure us that these practices were introduced from the Wagiriana; the Ndzaiko ya nene does not extend beyond Kitui, it is unknown in Theraka and Machakos. The institution is therefore probably of quite recent date after degeneration had set in among the Akamba, and they had become very different from those who were capable of creating their laws, for instance.

The Ndzaiko ya nene is generally said to be bad, and causes the failure of rains; there is little doubt that it is not at all popular, and if despite this it continues the only reason can be that those already initiated are capable of forcing others to join.

Hunting.—The following customs concern the introduction of young hunters to the art, and were related to me by a hunter of great renown in Mumoni:—

(1) When a party of hunters go out it is the custom for the novices to bring presents of meat to the older hunters. If this is not done, a young man who has seen an elephant may not shoot it or tell the party that he has seen an elephant, he must say that he has seen a stone. One of the older members of the party then goes to see for himself, and if he sees the elephant he breaks a twig across his forehead and prays that they may find many more.

(2) If one of the party shoots a cow elephant and it is the first elephant he has killed in his life, one teat of the beast is cut off, together with a piece of the trunk, both of which are hidden in the bush. An older hunter then takes him by the wrist and tells him to cut meat, whereupon the man thrusts his knife into the carcase. After this he must cohabit with his wife and in future he will have good luck in his hunting.

(3) If the novice wounds an elephant and afterwards another man kills it, the former goes to the eldest hunter of the party, who carries him on his shoulders to where the elephant lies and tells him to shoot an arrow into the carcase from his shoulders. This done, he must pull out the arrow again. Subsequently he will lay a piece of the ivory or meat under his bed and have connection with his wife. This done, he will not fail another time to kill his elephant.

As hunting is an occupation which requires experience and that brings much respect to the experienced one, it is only natural that there are required certain observances to mark the initiating of the inexperienced.

Harvest.—Before and during the rains the oath of Kithito may not be taken unless a sacrifice is offered, otherwise the rains would fail. For the same reason "Mwe" may not be threshed until after the spring rains. In the spring, 1909, the natives were badly in need of food, but while they had plenty in their stores they were prohibited from using it until late in June, when it was threshed. In ignorance of this regulation a certain amount was threshed at the Government

station and shortly afterwards a large number of women came to demand a goat for a sacrifice to appease the spirits.

I have already mentioned that iron may not be used in the fields, for this would drive away the rains. Probably the same idea underlies the objection to the railway. I talked once to an old man on the subject, but got very little out of him, excepting a look, which plainly said that if I did not know that to lay an iron band all across the country was enough to drive all rain away, what did I know. Unfortunately, there have been a series of dry years for about the last ten years or more.

When the crops of Mbazi look poor, the following ceremony takes place. A number of people go out to catch some rock rabbits, called "Kinyoe"; they have also another name, "Kikila," and when about to be caught, the people speak of them only by this name, for if they are called "Kinyoe" they cannot be trapped. The whole party sleeps out in the bush, and they must catch these little animals alive; moreover, they must get one or two more than are required and set them at liberty again. The animals, which are often also called "sheep," are placed in a basket of twigs and carried by an elder, whom the rest surround, singing and dancing with branches of the "Mokikia" tree in their hands. The song on one occasion when I witnessed this performance ran as follows:—

"Mwei wa Mupiu tuevatu, Mweita wakwa ikimitwe na mbwewe."

(In the month of Mupiu we are angry, my mother has been shot by a cartridge.)

On returning, the whole party slept at the village of the principal elder and next morning the elders of "Ithembo" came and took the animals into the bush; here they were killed, after which the contents of the stomach were sprinkled over the fields. In the south this is done at any time to bring good rains, while in Machakos I am told that it is used for this purpose as well as for cattle medicine, particularly to give them a glossy skin; in the latter country only one of the animals need be caught.

On the occasion when I saw the Kikila being brought from the bush many of the people were also carrying poles to be made into "Mue" staves, and I think that there was some idea that it is lucky to cut these at the same time. The Mue staves are implements that seem to have a particular merit, and strictly speaking they should always be made by the village elder or father.

Hut Building.—There is no particular ceremony to be observed at the building of a hut; it is, however, necessary for the husband and wife to have connection when the hut is completed and a failure to observe this is followed with the direst misfortune in the way of sickness and deaths. Sometimes a very strong wind will carry the grass off a hut and leave very nearly only the framework. This is regarded as extremely unlucky, for it is supposed to be the work of an angry spirit and, therefore, when the grass is replaced it must be sprinkled with "Ngondu" by the elders. If a swarm of bees settles in or near a house it is a sign of very good luck.

Travelling.—When going along a road one frequently sees a firebrand and some leaves on the path near a place where natives have camped. This is because when setting out in the morning the first man carries a brand from the fire and throws it on the road, the next man lays some leaves over it and treads on them. This ensures good luck on the road. As a preventive against foot wounds it is considered good to rub the feet in dry hyæna dung.

Sneezing.—When a Mkamba sneezes he always makes some remark. I am told that those of Machakos say "Atcho," and on repetition "Kola" (an exclamation denoting joy). In Kitui, as one might almost expect, every man has his own particular exclamation. I have heard phrases such as "I am the greatest of my father and mother's clans," another repeated his father's name, as he said, to show that he was still young, another "Kutsya" (quiet). It seems that as a rule such exclamations have reference to the sneezer's father or grandfather.

Counting.—As I have already said, it is unlucky to count cattle, and this applies to all living creatures, but particularly to the counting of girls. All odd numbers are unlucky, but more than any seven is a bad number. A man will never herd cattle six days and rest the seventh: he must go on to the eighth day. This is called "Ndethia," and were a man to cease herding on the seventh day all the cattle would die; with other work this does not seem to be the case.

Blood Brotherhood.—As an introduction to blood brotherhood, friendship is usually made by the exchange of honey beer and a goat. Later the two meet, bringing honey beer in a bowl from which each takes a mouthful and spits it out into the bowl again, after which each drinks half of the beer. After a few days the two meet again, and each cuts the other with a knife very slightly on the back of the right hand and licks the blood off. The brotherhood thus established is most binding and if broken by either party will result in his death. The blood brotherhood passes on to their children after their deaths, but a fresh ceremony between the children is not required. In consequence of this the children of blood-brothers may never marry.

Weapons used in Murder.—Although I have dealt with the subject of murder at some length, there is still one point of which I must speak. Among many tribes the weapon used to inflict death upon anyone is in some way purified; among the Akikuyu it is blunted, and I believe some such observance is almost universal among African tribes. The performance of such acts originates in the idea that the weapon carries with it misfortune or fatality, and so it is with the Akamba. The weapon once used in murder continues to be a means of further destruction, but here there is no ceremony, no medicine or magic that can abate its fatal spirit: henceforth and for all time it will continue to kill by the hand of its owner, no matter what he does with it. Since there is no way of ridding oneself of this curse, the Mkamba has recourse to craft and cunning; he will lay the weapon on a path or place where a passer by is likely to see it. Once the finder has picked it up its bane falls upon him and the first owner is free from it. This belief is, I think, of special interest, because it speaks of the manner in which murder is regarded. We

have seen how necessary to the murderer is the Etumo: it takes the curse of murder off the aggrieved party as well as off the murderer, but the latter has still the fatality of the weapon upon him, a fatality which neither time nor art can erase. These facts almost remind us of ancient legends of persecuting fate which goes through generations, never to be appeased. If we consider this fully it will be apparent that the oft-repeated maxim that life among natives is cheap and murder of little account is absolutely a fallacy. With the Akamba murder is not a passing crime or light matter: it is a fearful deed, the curse of which pursues men from place to place; the mark of Cain does not here die out with Cain: it is put into the world once and for all and therefore it is impossible to assume that the natives regard murder as a light matter; those who realize this will understand why it is, perhaps, that downright murder is indeed rare among the Akamba, infinitely rarer than with Europeans, and personally I cannot recall a single case of what one might term murder with malice aforethought.

MEDICINE MEN AND WITCHES.

Among many tribes the medicine man is a person of importance second to none, or the chief medicine man may be practically the ruler of the tribe. Among the Akamba this is not so and it is not surprising, since the knowledge of the medicine art is not highly developed and much of the knowledge appertaining to it is shared with laymen; but more particularly the medicine man's importance must suffer from the fact that many of what one would expect to be his most important duties are performed by the elders, such as the curing of Makwa and the offering of sacrifices.

Despite these circumstances the medicine man is much respected and frequently in demand because he has many ways of coping with the spirits and supernatural powers. In this capacity he is, perhaps, most sought for the making of charms.

Whenever a man falls sick he will on recovery go to the Mundu Mue to obtain a charm for the purpose of protecting him from the evil. Most of these charms are little bits of wood with marks burned on them. I can discover no method in these markings, but the medicine man knows in each case in what manner they should be made. They are worn on the part of the body which was affected, as, for instance, on the wrist in the case of an affection of the hand or above the elbow where the wearer had suffered some damage or disease to the arm. Such charms are worn permanently by the owner and may never be dispensed with or the evil will at once return. There are, therefore, charms to protect against returning disease, etc., besides many other charms which are used to relieve pain or to assist in the speedy healing of a sore, etc.

Such charms are very often small horns filled with the proper medicine, or little bags containing it, and are worn slung from the belt or a chain and often artistically decorated with wire or giraffe hair, and when the wearer sustains any damage he will lay it against the injured part.

None of those charms need necessarily be made by the medicine man, but more generally they are constructed under his direction by the wearer. Much of the medicine art is not altogether the monopoly of the medicine man: most hunters, for instance, know how to concoct the medicine with which they are always provided for ensuring the snaring of game; the same medicine is often capable of procuring for the owner the good will of women. Many of these charms, like Kithitos, are inherited through generations and the owner may not know whence it originally came, but they appear in such case to be generally much prized charms. It is difficult to say where the definition of a charm begins and ends. For instance, I once tried to purchase some of the tweezers used for pulling out the eyelashes from a party of young men who were dancing in my camp and the result was an instant move to leave the place; on enquiry I found that the man whose tweezers I had purchased was supposed to be doomed to die by my hand. It seems strange that such a simple article, which is made by every boy and worn merely as an ornament, one would think, should be so vital to the owner's life, yet the belief is very strong and should be considered when natives appear unwilling to part with such articles. Another article worn, which seems more or less to act as a charm, is a strip of the skin which is taken from a sacrificial animal and worn all through life. These are nearly always worn when a sacrifice is offered of animals paid in compensation, and seem partly to aid in the cure of a hurt done and partly to ward off its evil effects, as, for instance, in the case of murder.

Thus charms are most variable articles and the most important of them are not always the work of magic. The subject of magic has led me to think that between this and the knowledge of how to please or ward off the spirits there is very little difference, if any at all, and that there is therefore no special art which can be called magic: it is simply the cult of the spirits.

The contrary of the making of charms to ward off evil is the construction of spells or curses for the purpose of bringing evil upon others. The art is closely allied to that of witchcraft, but that to which I refer here is not the practice of a person who is by nature a witch, but the supernatural aid invoked by an individual for the purpose of destroying a particular enemy or for the protection of property, that is to say, a form of taboo. For the former purpose a man may be instructed by a medicine man as to how to act, by laying a particular charm in the enemy's village or on a path where he will pass, or it may be by throwing earth at him, accompanied with wishes for his destruction; it may be noted that in Kingolle the brother of the victim throws earth at him, very possibly thereby cursing him and disclaiming the family ties. It is said that when cattle disease breaks out, a man who has lost his cattle will smear their blood on the path where he knows the cattle of another will pass, which is believed to carry the disease to them; this also is a form of spell casting for the object of bringing evil upon another. For the protection of property there are such spells as are laid at the trees in which honey barrels are kept; these are said to cause anyone who steals the hives to be bitten by snakes on descending the tree. I cannot say whether such spells are connected

with the clan mark of the hive or whether they are commonly used. A better example of such practices is what is called "Wathi" in Mumoni, and is a spell or curse laid upon the quivers which afflicts a man with a disease of sores if he opens the quiver of another. A young man told me how he gave his quiver to a medicine man for this purpose. The medicine man disappeared into the bush with the quiver and presently strange noises were heard simultaneously from various directions; after a while the medicine man reappeared and showed him how he must open the quiver, for the result of this operation is that it can only be opened in a particular manner without harm ensuing, and the protection lies in this that the owner alone knows the proper manner of opening his quiver. This practice is only known in Mumoni. There is in this district a man who is said to have a quiver that no one can open at all excepting himself. In these cases the spell is not represented by any article attached to the quiver, but it derives its merit from the peculiarities with which it is endowed by the medicine man.

The medicine man also makes charms and medicines for the public good. Of such there are gateways made of two sticks on either side of the road, connected by a strip of hide with a crow's feather hung from the centre. This is for protection from cattle disease, and the cattle passing through it leave their sickness at the gateway. Such a charm will generally be seen at either end of a belt of fly-area on the road to Mumoni.

Another means whereby a medicine man may direct the path of life for a Mkamba is by making little cuts in his skin and rubbing in a particular medicine for various purposes. This done to the tongue gives a man the power of great authority in his speech; the same treatment to the forehead and throat just above the breast bone ensures to a man the admiration of women, and applied to the chest or abdomen brings him great riches. Almost every Mkamba has one or more of these magic medicines about his body which serves him all through life, or if not, a reason for its failure is, of course, easily found. But not only the body may be thus endowed, inanimate things can likewise be doctored. A medicine man once put medicine on a cent coin for me, which he said I should never lose, for it would bring me great riches. This he did first by putting some curious black rubbery material into the hole in the centre of the coin, and by spitting on it three times. The next day, however, he appeared again and said that during the night a spirit had communicated to him the particular root which was suited for medicine in my case. This root he produced and having added a little to the mixture on the coin he gave me the rest, together with a piece of his hair, which, apparently, also was a very lucky trophy.

One of the commonest duties of the medicine man is the curing of sickness, but of course he has first to discover its nature and causes, and this is very commonly found to be the anger or possession of a spirit. To a similar cause barrenness in women may frequently be attributed by the medicine man. His cure may be quite simple: it may be the construction of another doorway to the village, presumably because the existing one harbours a malignant spirit, or he may even recommend

entire abandonment of the village. Frequently a sacrifice is offered and the names of many deceased members of the family are called until that of the particular spirit molesting the patient is mentioned, when the trouble will abate. But very frequently the medicine man recommends a dance to be performed, in which the drumming and singing are his duty. One such dance I saw was as follows. The medicine man drummed and sang in monotonous tones, while the patient was seized with strange convulsions and rolled about in the mud before him. Other women were similarly affected, but the men took no part in it. This performance was kept up for about six hours during four days. On the third and fourth day the patient was painted with red and white checks all over the body and stripes on the legs. This dance, I was told, came from Rabai, but there are others original to Kitui. Almost every case of sickness is ascribed to a spirit, in fact disease and spirits seem almost to be regarded as one and, therefore, possession by a spirit, disease and madness do not appear to be defined one from the other. The medicine man, therefore, has the power of expelling spirits.

Another branch of the medicine art is that of fortune telling and prophecy. This very frequently takes the form of dreams by the Mundu Mue. There are several well-known prophecies of former times regarding the coming of the white man, but I have not heard of remarkable events foretold in later times: mostly they refer to the approach of the rains. Most common, however, is fortune telling by counting berries and other odds and ends which the medicine man keeps in a gourd for this purpose. The art is very common among medicine women and the method is as follows. A quantity of the contents of the gourd is poured out on to a cat skin and counted in heaps of tens; from the remaining number under ten the medicine man knows the answer to the question asked him. I asked such a man once many questions to which some of his answers were true, and found that like European fortune tellers his oracular replies were either vaguely framed or they showed that he was possessed of a very shrewd mind which from obvious circumstances could deduce facts which the ordinary individual could not surmise. The future can also be divined from sacrifices, but one medicine man across whom I came had his own method, which I have never seen otherwise. He used a small dick dick horn with two holes bored into the base; into these he inserted two sticks weighted at the ends so that when he put the horn on his finger it balanced there and from the manner in which it swayed he divined past and future events as well as present occurrences afar off. This was the same man who doctored a cent coin for me, and the first medicine which he put on the coin was a little of the material with which the two sticks of his divining apparatus were weighted. Besides this he also knew a great deal regarding myself which he said his spirit revealed to him, but he also had a third method of foretelling the future. The dick dick horn which he used for balancing was laid between two little gourds of medicine and bending down with his mouth to the horn, I presume that he stuck it into his gums, for presently he got up and spat into his hand saliva and blood mixed, which latter he declared came from my body. The blood, he said, was

remarkably little, and therefore he knew that I should live long in safety, for had there been much blood it would have signified that my blood could easily be taken.

An important art of the medicine man is the detection of witches. These are a very prevalent curse and are found chiefly among the women. If a woman is a witch her daughter will be one too; they appear not to be able to desist from their evil practices and formerly they were often put to death by Kingolle as public dangers. Sometimes they are said to kill people by merely touching them, but there is little doubt that most deaths by witchcraft are nothing but cases of poisoning.

The evil results of bewitching a person are said always to appear on the seventh day, wherefore it is explained that seven is a bad number. Such persons can be cured of their evil propensities by certain medicine men, but none of those in Kitui are possessed of this knowledge. Witches are particularly numerous at the present time and in 1910 a medicine man was called from Machakos to deal with them. This man detected the witches, who fell down immediately on seeing him and he cured them by giving them water to drink; his cures were, however, not successful and a medicine man of greater renown was called from Rabai. This man did not apparently treat the witches, but gave the people medicine which made them immune to all witchcraft. His medicine not only protected those who took it, but had the curious effect that anyone who put witchcraft upon them was himself afflicted with its evil effects. The consequence of this was that a person taking the medicine could with impunity swear falsely by Kithito, and the person against whom he was taking the oath was doomed to die. So also such people could steal honey barrels without fear. Here the medicine had power over witchcraft, spells and the supernatural power of the Kithito, which shows how strangely and closely related all these are. The same medicine man left as a parting gift some medicine at a water hole, which was such a terror to the whole population that no one could get to the water until it was removed. The medicine was in a little basket and consisted of some bits of wood smeared with blood. It had to be removed by his son and all the natives kept a respectful distance from it. I was also told that no Mkamba would dare to swear falsely by it; this shows again that a Kithito may be any sort of medicine besides being a particular article only designed for purposes of taking the oath.

I have spoken of these arts of the "medicine man," using the term as a general one. It must, however, not be supposed that all are practised by one man, in fact it is rare that more than one single act in one of these branches is known to an individual. Thus he may be limited to drumming a single dance for a particular disease.

The medicine man or woman is to be recognized by the number of ornaments he or she wears at all ages. As a rule their peculiar calling manifests itself when they are young, but practically grown up. According to a native account the initiation takes places as follows: "A man goes for a walk and his spirit" meets

him and says "I will make a Mundu Mue of him." In the night the man dreams that somebody comes to him and gives him a plant, telling him that it will cure such and such a disease. In the morning he wakes up and finds the plant in his hand. This goes on until he knows all about his future calling. Then probably he will cure a disease or dream of some event to come, and the people will know that he is a medicine man. They speak of his spirit as if he had a familiar spirit working through his agency: apparently he can also commune with this spirit.

One might ask why others seeing the particular plant used by the medicine man cannot use it the same as he; so also in regard to charms, it would seem more simple to fit a child out with charms against all manner of evils instead of waiting until they have attacked him. But the medicine art is not so simple as this. For instance, every native has seen the ordeal of a heated knife administered many times, and anyone who has seen it done could repeat the performance, yet it must be done by a medicine man and with the particular knife he keeps for this purpose. Similarly it appears that the same charm will not do for two people afflicted with exactly the same misfortune. The person, the cause and the circumstances of the case all seem to be important factors determining the construction of the charm.

Medicine women are even more common than medicine men, but their practice is generally more in the petty arts, such as divining by counting. When the medicine man takes out his medicines he lays them out on a cat or leopard skin: if they touch the earth they lose virtue. Earth seems to be used often for cursing people and may be a contaminating element. The gourd in which the medicines are kept may also never be emptied for the same reason. If medicine is administered it is usually handed to the patient through an archway of branches, which often may be seen outside the village of Mundu Mue. Among the medicines are an extraordinary medley of articles such as pebbles, crocodiles' teeth, lions' claws, berries of various sorts, and, as a much prized addition, a loaded cartridge. The latter article gives one an idea of the meaning of these medicines: it is presumably the latent power of the cartridge which is valuable. The cartridge is lifeless yet full of strength, but so also there may be strength in the lion's claw and fruitfulness in berries.

The medicine art is without doubt a strange mixture of truth and fiction. How often the medicine man is aware of this I cannot say, but at times he is certainly guilty of intentional deception. Thus in the case of a man suffering from fever a medicine man placed a cartridge to his head and then showed him a stone which he said he had extracted from the head. A duty which many of the medicine men perform is the administering of the ordeal of licking a heated knife blade. This I have seen many times done in the following manner. The medicine man took a white powder which he smeared on the tongues of both the parties, on their hands he drew a line of it from the centre of the palm to the tip of the middle finger, and from the forehead a line was drawn down to the tip of the nose. The knife was then daubed with the same powder in patches on the blade, and the

parties each stated what they were prepared to maintain to be the truth. Previous to commencing, the knife had been wiped with some herbs which the medicine man had chewed. It was then heated for a considerable time, after which one of the men licked it copiously on both sides; it was then treated with the same medicine and heated again to be licked by the other party. The judgment varies according to whether one party's tongue has been burned. In one case I saw that neither had scorched their tongues, and the medicine man declared that both their statements were true, which apparently was a fact. According to the medicine man the powder is medicine to heal the burns should they be severe, but I am told that the white powder is nothing but diatomite: it was clearly some insulating material, but whether the medicine man knows this I cannot say; if he does he might distribute the powder so cunningly on the blade and the tongues that one party would escape scorching himself, and in such case he has considerable power in his hands. Latterly the native councils have refused this ordeal on the ground that it is not above suspicion. An old medicine woman treated a man for a pain in his side by rubbing on the affected part some fat, which she said was medicine, but it was perfectly obvious that what she was doing was simply massage, and she was doing it very well, too, with successful results. I am convinced that she herself thought that the whole secret of her art lay in the fat which she was using.

The above three instances show that the Mundu Mue may be a downright impostor, or one who uses means which he himself does not understand. It is certain, too, I think, that many herbs and natural medicines are known to these people which are of real use, also that they know of many most fatal poisons.

There is, however, another means through which the medicine man works, perhaps, more important than any other, and that is the mind. The native is a marvellously impressionable creature, as is often proved. Supposing a man has an enemy and he lays medicine outside his hut designed to make him mad, the owner of the hut will see it, or, if not, one may be sure that he will be told about it, and thenceforth even the most sceptical native's life is full of fears. For generations the evil power of the medicine has been known, and the fear preys on his mind until it is too much, and the medicine has done its work. This I have seen more than once, and the truth of it has often made me ask myself whether, if the medicine man's art can bring about this, it can also bring about the opposite effect. The Mkamba knows well how easily life is lost, and on the slightest sickness he will think himself dying, but on the other hand he knows that if he can be helped it will be through the medicine man, and therefore all his hopes rest in him. His hopes in the latter will therefore be as strong as his fear of death, and lightened with this hope his mind is in the best state to assist his cure; thus I think many a cure may at any rate be facilitated by the influence of the medicine man. There is only one person who cannot be either cured or aided by his charms, and that is the medicine man himself. Curiously enough, most medicine men evince a shyness and nervousness very often which may be so

pronounced at times that one would think them mentally deficient. As a matter of fact, such is often, I think, the case, and the natives regard them as nothing but imbeciles in ordinary matters. They are said to be extraordinarily absent-minded and thriftless, which accounts for the fact that they are generally poor, and the more proficient they are in their art the less sane are they held to be. I believe that in an account of the Congo people it is stated that a foolish person is supposed to be particularly favoured by God, wherefore such persons are much respected. Possibly something of the same sort underlies the opinion as to the medicine man's insanity, for, as one man said to me, "he has a spirit in his head like a madman."

Somewhat akin to medicine and magic, although really quite unconnected with it, is the belief in the evil eye. The evil does not, however, seem to be seated merely in the eye, but in the tongue also. If a person of this peculiarity (called Kjeni) sees an article or living creature and says, "this is good," or words to that effect, the object is doomed to perish; even a stone is said to split asunder from the evil power of the person. If a man with the evil eye and tongue expresses his admiration for a woman who is pregnant at the time, she is sure to die in child-birth. The person possessed of this power can, however, also effect a cure for the evil by spitting on the object or person affected. There is a whole clan, the Mba Mwanziu, of which every member, no matter where he was born, has the evil eye and tongue, and, curiously enough, they are often sought for the curing of small hurts, such as burns or bruises, which they do by spitting on the hurt. Why they should be able to do this I cannot say, unless it is that the hurt is thought very likely to have been caused by them in the first instance.

RELIGION OF THE AKAMBA.

Shy and reserved as the Akamba are it is naturally difficult to ascertain much on the subject of their religion. The following is no attempt to draw up a definite creed for these people, but rather to collect the few scattered elements of religious beliefs in the hopes of showing that primitive suggestions of religion are not wanting among them.

Those unacquainted with the Akamba might at first sight find many surprisingly developed ideas of religion. Of such would be the story of a first man who had three sons—Galla, Masai, and Mkamba (some add Mutzungu-European!); the saying that the medicine man was made on the fifth and the bird on the sixth day, or the tale of the chameleon which brought the news of death to mankind. So also the crude form of a week contained in the prohibition against the seventh day might be taken to hint at a legend of the Creation. But that there is no such story I have been assured by the answers given to repeated questions put to them on the subject. "How can a man know the origin of the earth and men?" they say; neither have they any ideas in regard to the sun or moon, though they think all this may be the work of the "God or Spirits."

It must be remembered how many people of different creeds have lived among and exercised an influence over these people, from whom snatches of legends may have been picked up. More clearly this will be seen from such ideas as are found with regard to a being referred to as God.

The Mkamba uses three words to denote God—"Muungu," "Ngai," and "Mulungu." The first of these is pure Kiswahili, the second is Masai, and the third is most probably a corruption of the first. When asked what God is, the Mkamba begins to speak of "Aiimu" (Spirits), interchanging it with the Kiswahili word "Sheitan" (Devil); but in the end all these words are collected in the one "Aiimu." It becomes clear, then, that there is no Mkamba word for God, neither do they know of any such being, but the various terms used are merely collective words meant to denote the plurality of the spiritual world. When I asked a man what he meant when he had referred to God in his prayer as "Mulungu," he answered, "Is it not the spirits?" strangely indifferent to his confusion of the individual with the plurality.

But if to the Mkamba the world contains no particular God, in spirits it abounds. What a spirit is he does not pretend to know; they say "We see a man's shadow, and we say perhaps that is his spirit," and for this reason the camera is still feared, because it robs men of their shadows. Yet no Mkamba knows positively that his shadow is his spirit, for even stones cast shadows, and whether they have spirits he would not like to say for certain. But every man has a spirit which lives on after the body is dead, though the nature of after-life is very vague; mostly the spirits are supposed to live as they did on earth, with cattle as their riches, and some are rich, others poor. Their haunts are trees, rocks, and hills, the volcanic veins in rocks are their paths. To the living they manifest themselves in many ways. Sometimes they enter animals, such as wild cats, which come into the villages; the unusual appearance of such an animal in their midst tells them that they are animals of no common sort, but are possessed with human spirits. Many sicknesses are put down to the spirits, particularly in the case of those who have offended against them and subsequently die. Sickness invariably denotes the anger of a spirit following upon some offence or neglect, and it is then often the medicine man who can detect the cause and prescribe the cure. Any ill-luck may, however, be due to the same cause. Thus, where a hunter had failed to find elephants, he declared that this was due to the fact that he had omitted to offer a sacrifice before starting, and before going out again a sheep was offered. The animal was killed at about sunset, a few pieces of the flesh from the throat were laid on the bare earth, next some of the blood was poured on the ground beside the meat, and finally a little water was poured next to the blood. Upon each of these acts the hunter offered a prayer for success coupled with other wishes. From a small patch of dry earth left by the water he divined that shortly he would find two cow elephants.

The most common manifestation of the spirits is madness, temporary and permanent. The former is most usually seen during dances performed by women, and takes the form of a kind of trance but accompanied by convulsive movements

of the body; women in such a state often utter gruesome cries and shed copious tears. Such attacks do not seem to be feared, for the women always readily take part in the dances; it is explained by the natives that they do not avoid the dances, because the spirit would attack them in the field or village or anywhere else; curiously enough, however, I have never known this to be the case, whereas it is not uncommon to see out of thirty women at a dance ten of them thus possessed. The possession is supposed to abate by the application of ghee to the head and shoulders. Not all women are subject to such attacks, and it is said that if they do not show themselves while she is still a girl, a woman will be free from them all her life. It is very rare that a man is possessed by spirits; I have, in fact, only seen two cases of this, and it is said that a man so afflicted is always a medicine man or will become one.

Under the influence of the spirits women sometimes utter strange noises which are interpreted as prophecies. A missionary told me that in Ikutha some time ago there were many such cases in which the women uttered sounds which were apparently Arabic syllables, and the "r" was clearly pronounced, although this is a sound which is most difficult for the Southern Akamba to speak.

The instance here given in which a tendency to a foreign tongue was noticed is rather curious, because the appearance of foreign spirits is not uncommon. Particularly well known are a Swahili and a Masai spirit. The effects of possession of such particular spirits are much more violent and they generally seem to be foreign spirits. One spirit called "Kesho" is said to have come from Machakos, and under its influence people slash themselves with knives but are unable to injure their bodies. Persons possessed by this spirit are said not to be able to abide the sight of a hat; I saw one such patient who, at least, was mildly insane, and whenever I came near him his condition seemed to grow worse, though I cannot say whether it was the hat or the whole European which affected him. Quite lately another spirit is said to have come from Machakos which torments people most grievously; one of its petular symptoms is that the patient is not to be pacified until he has shaken hands with somebody. Four women in this condition once beset me while I was riding on a mule; and, despite the restlessness of the mule, they were not to be put off until they had succeeded in shaking hands with me. Frequently they are, however, not to be calmed at all, and if anyone starts abusing them or others near them they are said to die. I have not seen such extreme cases, but a porter of mine was one day so afflicted and no one dared to try to carry him lest he should get angry and die; in the same district I was told that six women had died of this cause.

Apparently the cause of such possession is that the spirit desires some object or other. When the Masai spirit attacks women a dance is performed in which the women carry spears and other arms to satisfy its demand. Here the demand is evidently for arms, and possibly when the more ordinary spirits afflict the women in the dances it is because they desire ghee, wherefore such persons are smeared with ghee as I said before. The spirit may, however, persist in its demands until

the woman's husband is tired of trying to appease it and then he will decide to expel it altogether. To this end a dance is performed for several days, and finally the medicine man goes with the dancers into the bush and there by some ceremony completely drives out the spirit. The latter part of this performance I have not seen, but on one occasion the dance previous to this final act was as follows: the patient was seated on the ground before the medicine man, who drummed and sang in monotonous tones, and shortly the woman was seized with strange convulsions, during which she rolled about in the mud, being apparently perfectly unconscious, while her eyes bore the peculiar glassy stare that one sees in somnambulists. Other women were similarly affected but the men standing about took no part. This went on for four days; on the third and fourth days the patient was painted with red and white checks all over the body and with stripes of the same colours on her legs. This dance, I was told, was not original to Kitui, but was learnt by the medicine man in Rabai; others very similar, or at least with the same object, are known and practised in Kitui. It will very often happen that none of these performances will get rid of the troublesome spirit, and then the only remedy is for the whole family to move elsewhere. It appears that the ordinary spirits are more or less bound to one locality, whereas those of foreign extraction appear in many distant parts.

Thus the spirits are mostly malignant, and either out of revenge or cupidity they plague people, particularly those of their own family. They constantly require appeasing, and they also require attention in order that their wrath should not be incurred. Attending to all these demands of theirs is the religious cult of the Mkamba and his religion is thus a spirit religion.

The above-mentioned modes of appeasing and pleasing the spirits are everyday cases affecting individuals of any sort; the treatment may also be undertaken by anyone up to a certain point, after which the aid of a medicine man is generally necessary. The regular service of the spirits is, however, not the duty of the medicine man but of the elders of Mathembo. The Ithembo is a place of sacrifice to the spirits; there are hundreds of these in Kitui, but how they originated is more than I can say. I know of one where it is said that a number of people are drowned, another is a large grove of trees on a hill side in which the spirits dwell, as indeed practically every large tree or grove is the abode of spirits and an Ithembo. It seems thus that an Ithembo is simply a place which, from its nature, is held to be an abode of the spirits as also a place which from a particular circumstance has become so. The elders of the Ithembo offer the sacrifices and are thus more or less the priests of the people; it is interesting to note that they are also the principal administrators of the law. The offerings may be laid on the bare ground, or they may be placed in a hut built on the spot, which is sometimes similarly constructed to the living huts, other times it is scarcely two feet high, though always of the same shape as the living huts. When goats are sacrificed the skin is usually laid over the roof of the hut; in one of them I saw a bowl of grain, a little tobacco, a green gourd, and honey beer, which seems to be the most necessary part of the

offering. It is generally said that the offerings ensure plentiful rains, and so far as I can learn some Mathembo are particularly important on this account, but whereas one might expect that such places would receive particular attention I have found that the reverse is the case. To the ordinary Mathembo offerings are taken regularly on appointed days, but at Mtonguni, where there is a large grove to whose spirits they particularly look for the bringing of rain, it was, in 1909, a whole year since any offerings had been taken there, and then only when the absence of rain threatened a serious shortage of food. At this Ithembo the offerings were brought by the women, and it appears to me that Mathembo of particular merit are often attended to by the women. The huts built at these places are often allowed to fall very much into dilapidation and are not restored until the spirits are thought to be angry. When a settlement leaves a district and tracks elsewhere they cannot, of course, take the whole Ithembo with them, but in such case the spirits are induced to follow them by profuse offerings, which are brought to some large tree or grove. Sometimes the spirits will not follow for a long time, but eventually they will go, lured thither by the abundance of food awaiting them.

The foregoing deals with particular manifestations of the spirits and their service. If we now look back into any of the previous chapters it will be seen that almost every subject either directly brings us to a question of religion or hints at the influence and presence of the spirits. The tilling of the fields, the building of a house, are practically acts of religion, the law is in the hands of those who more particularly are dedicated to the service of the spirits, and its provisions frequently are ultimately religious observances; in fact, compensation seems to be as much a religious observance as a legal requirement. The whole of the medicine art seems to be derived from, to merge into the religious sphere and to be largely dependent on the spirits. Makwa undoubtedly belongs to the same region, and thus, to sum up, religion enters into the most insignificant departments and acts of the Mkamba's life. So also the spirits are everywhere, in the hut of a dead wife, in the village and field, in trees, rocks and hills, and in all these places they may manifest themselves or have sacrifices made to them. Anyone can sacrifice to them in any place, and up to a certain limit everyone can exercise a certain influence over them.

All this should lead one to conclude that the whole of a Mkamba's life is closely dependent upon and influenced by the spirits, so that in dealing with him one must expect likewise to be largely dependent upon the same forces. I mean to say that much that seems absurd and inexplicable must nevertheless receive full consideration, because, to the Mkamba, it may be of vital importance. In conclusion I should like to give just one instance of that to which I here refer. An arrangement was made for each chief to send to the station one of his young men to do duty as a native policeman. When the housing of these men became necessary it was found impossible to induce them to take any part in the construction of their own huts. On the face of it this appeared due only to the incorrigible indolence of the Akamba, but I make no doubt that the real truth was that they were all unmarried men, in consequence of which if they constructed the huts the observance mentioned

earlier was not possible, and the omission could only be held to doom them to continual misfortunes.

CLANS AND DEGREES.

The whole Mkamba tribe is divided into clans and these into families. It is not possible to say how many clans there are, partly because without doubt many families have come to be regarded as clans, and partly because they have no particular or approximate localities. Despite the uncertainty that exists regarding the clans, the ties between their members are extremely close: they are bound to help one another in every way, as, for instance, in subscribing towards the payment of blood money; in such case the cattle borrowed do not remain as a debt against the murderer, for on the other hand, as is shown in the Etumo ceremony, the members of a clan also receive a part of the blood money, so that the death in the one case, as also the compensation in the other case, are the concern of the whole clan. It is said that formerly if a man was attacked by a party of enemies and it became known to one of the party that the man was one of his clan, he would step over to the enemy's side to defend him against his own party. So close is the relationship that members of the clan may not marry although they have not met for generations. These rules are most strictly observed to the present day, and a breach of them results in the death of all the offspring of such persons.

Although there are clan totems it does not appear that every clan has one; this may, however, well be because, as I have said before, many of the so-called clans were originally families. Strictly speaking a man should not kill his totem animal, but this is certainly not always observed.

Owing to the manner in which the clans have drifted apart it probably always will be difficult to learn much about them: I have never known a man who could tell much about his clan or knew its origin, but the families are better known, and often there are quaint stories told regarding their origins. They seem always to be called after their founders, others are of quite recent date and may even be offshoots of other families; apparently it happens that if a man drifts from his family while still young, so that he gets altogether out of touch with it, his descendants will call him the founder of their family. Occasionally one family lives in a particular district, but as a rule its members are very much dispersed all over the country, and most families in Kitui know of other members in Machakos and Rabai.

Every adult male Mkamba belongs to one degree or other into which he is admitted on payment of certain fees. When still quite young he pays his first goat and becomes a "Mwanake" until he has paid another goat, when he is called "Mwanake ya Ngoo." After this he may, by payment of another goat, become a member of "Kisuka." This degree is, in the northern and eastern parts, called "Kjau"; the duties of these men are the throwing away of the dead; they are often classed under "Atumia," but are not strictly speaking regarded as elders.

The payment of the next goat brings a man to the degree of "Mtumia ma Nzama." These are the elders of the lowest degree entitled to sit on the Nzama Council; it is not that they form the Council by themselves, but nobody of a lower degree may take part in it. It is not until a man has paid his seventh goat that he becomes a "Mwanake ya Ithembo," his position as such is much as a novice and his duties are to carry the sacrifices for the elders of Ithembo to the place of sacrifice. On payment of another goat the "Mwanake" becomes a "Mtumia ma Ithembo." These are not only the elders who offer the sacrifices at the "Ithembo," but they are the principal elders of the Nzama and form in fact the Government of the country. They are mostly old men, and to them are known all the customs of the people, so that a correct decision often requires their advice. As a rule each elder belongs to a particular Ithembo, but they may also belong to several Mathembo; for instance, in one district I found twenty-one elders of this degree and only fifteen Mathembo.

The fees paid to attain these various degrees are given to a member of a higher degree, thus a Mwanake pays his goat to a man of Nzama, who has paid two goats in his degree; to become a member of Ithembo the fee is paid to a Mwanake of Ithembo.

There are, however, degrees within these degrees, and to attain these the fees are paid to superior members of such a degree. The position of a man in respect to his degree is marked by the part of such goats which he may eat, the lowest getting the foreleg and the highest the kidneys, haunches, and they also are given the skin, the next highest is given the head. Should a man pay more fees than his senior, their positions are exchanged. There is nothing to prevent a man from belonging to any degree provided he pays the proper fees, but no half-grown young man would be admitted to "Nzama," and therefore he will not probably become the senior of his degree until he has grown older. The Ithembo is an exception to this, for a man cannot belong to this degree so long as his father or eldest uncle is alive, unless either of them is so old and infirm that he cannot attend to his duties at the Ithembo. Another exception is made in the case of a man who is the owner of an Ithembo. The ownership is inherited from father to son, and when a man dies his son must be an elder of that Ithembo, no matter how young he is or what other degrees he has not yet attained. He is not, however, on this account only admitted to all the other degrees.

From the foregoing it will be seen that before a man attains a high position as an elder of Ithembo, he will have paid many fees; I was told by one such man that he had paid over forty goats during his life. In consequence the elders of Ithembo are generally fairly wealthy men, and old men may be seen who are not even members of "Kisuka."

The only degree for women seems to be that of "Ithembo." They are usually the oldest women, and to be members they must make "Ogi" for the elders and give presents of bananas, which are divided among the elders and other women of Ithembo. Younger women seem, however, to occupy much the same position as the "Anake" of Ithembo.

Entirely apart from these degrees there is another class of elders called "Atumia ma Ukuu." These are, so to speak, the keepers and preservers of many peculiar customs; most elders of the Ithembo will be found to belong to Ukuu, but such is not always the case. The first condition for a man belonging to Ukuu is that he must have lost by death a near relative such as a son or brother. The learning of the elders of "Ukuu" is, however, not rapidly attained, on the following account. When a man has need of knowing a certain custom he will go to the elders for information, and each time he does so he is required to pay a goat, or if he be a rich man a bull. By degrees he thus learns all that is known to the Ukuu elders.

The customs are not only known to these elders but the ceremonies in connection with many of them must be performed by them, such as the purification of a village. Most important of their knowledge is the curing of "Makwa." Makwa, or Thabu, as it is called in parts, is a state of disease into which a man falls on a breach of certain customs, a few of which have already been mentioned. It manifests itself either in an outbreak of sores all over the body or by gradual wasting away of the body. I will not enter into a description of all the cures, but it should be noted that most of them include the use of "Ngondu," a mixture of water and certain kinds of woods. The use of Ngondu often seems to hint at the appeasing of spirits, as, for instance, the sprinkling of it over a house when the grass has been carried off it, which is regarded as the work of an angry spirit.

So far as I can learn, Makwa has not many causes, neither can it be put upon another by his enemy, nor does it afflict animals. The cures are not known to the medicine men, excepting such as are members of Ukuu, neither can it be got rid of by the use of ordinary charms or sacrifices.

The whole learning of the elders of Ukuu is a matter of great secrecy, and may only be imparted bit by bit to those who have the necessary qualification and who pay the fees. When I was instructed in certain matters by the elders, I had to pay a large fee for myself and a lesser fee for my interpreter, whom I had to bind over faithfully to keep secret what he had heard; elders were also stationed around to keep off listeners, and our conversation was carried on in low tones. All this explains why it is so difficult to obtain correct information regarding Kikamba customs, for either many of them will not be known to the man who is asked or if he is aware of them he is bound to secrecy.

THE THERAKA.

The Theraka, or Thaaka, as the Akamba call them, live on both sides of the Tana River. The land occupied by them, on the Kitui side of the river, is called Thagishu, and is a small strip of country, barely ten miles broad and about twenty miles in length.

Roughly speaking, it is bounded by the Katze River from the Mumoni hills up to where this runs into the Tana. Compared with the country of the Akamba,

it is well watered and famines are rarer here, which may account for the fact that on the whole the Theraka are better developed people than the Akamba, to whom they bear a striking contrast, both in character and appearance. In language and looks the Theraka resemble the Akikuyu very closely, in fact, when spoken to in Kikuyu, they generally seem to understand, but not many can understand Kikamba.

On the whole the Theraka compared to the Akamba are bold, manly people, and their quickness of temper contrasts very strongly with the lethargic character of their neighbours. Small as the tribe is, so jealously have they guarded their country, that the Masai never went there; and until quite lately they did not shrink from attacking armed Europeans.

It may be that the people were too poor to attract the Masai, but it is certain that had they come they would have been vigorously resisted, for the Theraka apparently never failed to combine against foreigners, although the different clans otherwise did not have much in common.

While the Theraka excluded all strangers from their country they appear never to have ventured out of the limited area occupied by them. A change in this respect is only now beginning to show itself, and the great majority still have a horror of leaving their country, beyond which they suppose all sorts of terrors to prevail. In consequence of this they are some of the most ignorant and primitive natives to be found in East Africa at the present day; besides this they have nothing like the intelligence of the Akamba.

As regards the origin of the Theraka, they state that they came from the Akamba, and with these in common they seem to denote the region about Ulu as their original home. According to the legend, a man called Theraka settled on the banks of the Tana River and there made acquaintance with a Kikuyu whose customs pleased him better than his own, so that in time he assumed those of the Kikuyu.

It seems inexplicable how the deadly enmity that in a way still exists between them and the Akamba arose, but one can scarcely imagine that these people are entirely mistaken as to their origin, and therefore it is perhaps not impossible, as I suggested before, that the Theraka are the aboriginal Mkamba race of Kitui, who possibly were driven over the Tana and subsequently returned to the Kitui side of the river.

At the present day there are four tribes of the Theraka living on this side of the Tana. Each clan has its head, and lives more or less within its own district, of which the head of the clan is the chief. The clans are divided into families, of which some are almost regarded as clans, but the original clan is well known to each man. The names of these four clans are: Anginna, Murruru, Utonga, and Mbua. Of these the last named seems to be the most respected, and claims a peculiar descent, of which the story goes as follows: One day a terrific thunder storm raged, and following a loud clap of thunder a huge cloud burst, from which fell a man called Mbua (rain). From him the clan is descended, and he brings the

rain every year, wherefore sacrifices are offered to him at the approach of the rains. Mbua originally lived in the sea, whence all mankind came, including the white race.

The Theraka villages are much after the style of those of the Akamba, but even more primitive; they are frequently situated on the hills. The number of huts greatly exceeds those of the Akamba, cooking huts, goat huts, and the huts for husbands are built; as a matter of fact, however, the same used to be the case with the Akamba. They are built of sticks, and thatched only on the roofs so that the body of the house is open. The best houses will often be found to be those of the goats, and many living huts are so rough that they consist practically only of stout sticks stuck in the ground with a flat top made of thorn branches; occasionally one may see a simple construction of tall reeds forming a shelter in the shape of a wigwam. Some of the poorer people have no village at all, but a single hut against which they lean dry thorn branches. The young men do not live in the village, but have their own hut in the bush some little distance away in which a number of them live together.

The fields are usually some distance away from the village. The chief food stuff is maweles, other sorts of grain are not cultivated much, and maize is scarcely ever seen. The grain is stored in the same way as with the Akamba.

Honey gathering is largely practised in the same way as in Ukamba, excepting that the hives are slung from trees by a rope or a stick passed through the barrel; they are marked with the mark of the clan. Beer is made both from honey and maweles, and is largely drunk apparently by men of all ages. This is, however, disputed by some of the Theraka, and a man who was by no means very young refused to pour away some honey beer, saying that if the fumes entered his nostrils he would die because he was not yet old enough to drink it.

The weapons of the Theraka are made by their own smiths, called "Muturri" (Kikamba "Mutui"). Despite this, any stranger would think that most of them were collected from various tribes, for their chief weapon, the spear, is fashioned after all sorts of types such as Kikuyu, Masai, Galla, and a uniform type is not found; so also their swords are sometimes fitted with the long blades of the Kikuyu type, and others have the short Mkamba sword blade. Shields are made either of skin like those of the Akikuyu and coloured after the same styles, or they are made of narrow curved boards likewise coloured. Bows and arrows are commonly used, but are not their foremost arms as with the Akamba. The arrows also vary much in shape, and the finer ones are, I think, all got from the Akamba; steel-headed arrows are not very frequently seen, and are largely replaced by wooden ones; it seems likely that the steel heads are a modern introduction, and that formerly, and not so long ago, the wooden-pointed arrows were the only ones made by the Theraka, while such steel heads as they had were got in time of war. The arrows are marked with the clan mark. The arrow poison used is not found in Theraka, but got from the Akamba by purchase. Quivers are not frequently used, and when seen are of the same type as those of the Akamba. Steel is now

obtained from European wire, but formerly and even now it is got from the hæmatite in the river beds.

The ordinary Theraka dance is somewhat like that of the Akamba, only more monotonous. They commence with a very stately procession of the young men, who chant in deep, measured, tones, accompanied by a kind of board drum consisting of a half circular slab of wood hung from the wrist and beaten by a club bound with grass. In addition to this, a horn consisting merely of a hollow branch gives a muffled, booming note which, in combination with the rest of the music, sounds like the droning of some metallic wind instrument. The young men and girls dance in couples, while one man sings and beats a drum made of a short hollow piece of wood covered with skin, which is carried under the arm. There are a number of other dances, which the young men perform alone. They are also very fond of games and sports, such as jumping and running or wrestling, which they will do of their own accord. A very popular game is played as follows. There are two parties which stand in a long row, along which a hoop is rolled. The party at the opposite end must throw their spears through the hoop, and must transfix it so that the hoop does not fall flat. One of the other party must then go on to their side and throw his spear through the hoop, which is often very difficult by reason of the angle at which the hoop stands; if he fails he becomes a prisoner and is called a "woman," until one of the party capturing him is taken prisoner. Compared to the Akamba the Theraka adorn themselves with very few ornaments; metal and wire ornaments may be seen, but are all obtained from the Akamba and other tribes, as, for instance, the natives of Kitoo, from whom they purchase the iron necklaces wound round with thin wire. Spiral brass plates are hooked into the ear rims, and the lobes are pierced and distended to hold large wooden ornaments of various shapes; occasionally one sees the ear rims cut with a number of incisions all round, but this I have never seen among the younger men, and it appears to be a habit which is becoming extinct. The older men shave their heads completely, or leave a large tuft on the crown, as is most common among the women also; young men twist the hair into strands lengthened by strings attached, and wear them either in a fringe all round the head, or twisted into a pigtail in front and behind, as the Akikuyu and Masai do. Nowadays, however, some adopt the Kikamba styles of headdress. Not a few also go to the Akamba to get their teeth cut after various fashions, and on the whole they show a great inclination to imitate the Akamba, despite the hatred that existed between the two tribes.

In dress the Theraka are very primitive, though the richer men now often wear blankets. The original and most commonly worn dress, however, consists only of a fringe of strings or a tuft of hair hung from a string carried round the loins in front and behind. The women, however, wear more clothing than those of the Akamba do. A complete skirt is worn from the waist half-way down to the knees, and in addition the married women wear an apron of skin, which is tucked in at the belt and hung from the neck. These skins are bordered with cowries and beads, and bead strings are wound round the ankles and below the knees.

In stock the Theraka are very poor compared to the Akamba; a large number possess no stock at all, and only the richest have any cattle. Their main stock are sheep and goats, but even of these a wealthy man has not more than the average Mkamba.

LAWS AND CUSTOMS.

The law is administered as among the Akamba by a council of elders, which is called "Kiama" (Kikuyu "Kiama," Kikamba "Nzama"). Apparently each clan had its own Kiama, but cases between men of two clans were tried by joint councils. Kingolle did not exist among them, but if a man disobeyed the orders of the Kiama he was publicly beaten. The oath of Kithito is represented by that of "Muma," which is also commonly used among the Akamba, but more for the taking of an oath by a number of people, for instance, a whole district. The procedure among the Akamba is as follows. A goat or bull is killed, and the blind-gut is filled with the blood. One of the party touches this with a stick and takes his oath, to which the rest assent, after which the gut is torn and the blood spills on to the ground. I believe that the procedure is much the same among the Theraka. Those who swear falsely by Muma are doomed to die. The ordeal of licking a heated knife blade is also used. Blood money is stated by different authorities variously as 40, 60, 100, and 600 goats. It is probable that 100 and 600 goats are incorrect, but which of the other two, viz., 40 and 60, is correct, I cannot say; the latter has been quoted several times to me by the principal chief, while the former was asserted to be right by two other chiefs and some elders of "Ukuu," to whom I paid the customary fee for their information; on the other hand, one of these chiefs formerly stated that 600 goats were paid, but I can scarcely credit this, as it represents an amount which is altogether unreasonable in proportion to the wealth of the Theraka. Blood money is paid by the clan, and taking 40 goats as the proper compensation, it is the practice for ten goats to be taken by the deceased's clan, while the remaining 30 head go to the brother or next of kin. I cannot find that any evil effects are ascribed to an omission to pay blood money, but formerly at least this always meant that the deceased's clan endeavoured to recover the amount by force.

Adultery is compensated by payment of seven goats or seven loads of Maweles; if there is issue the child goes to the woman's husband. Free love is permitted among the unmarried men and girls, but if a man causes a girl to conceive he is required to pay 32 goats, and the child goes to the girl's father. The stealing of honey barrels is a very serious crime and is punished with a fine of fourteen goats, which is double the fine imposed for ordinary thefts.

For loss of a finger, eye or toe, seven goats are paid, and for a leg or an arm twenty-one goats. A comparison of these amounts with those of the Akamba will show a great difference, which speaks plainly of the comparative wealth of the former as compared with the latter tribe.

On a man's death all his property is divided equally among his sons, though the eldest gets one more of each sort of animal than the rest, as also his father's wives. These he may not sell under any circumstances to another man, but he may give them away to members of his father's clan.

Birth.—This is only marked by the killing of a goat, from the skin of which three strips are cut and one put on the wrist of the child, another on that of the mother and the third on the father's wrist. The child takes its father's name, as among the Akamba; the most common name is simply "Mundu wa" (man of) followed by the father's name, and in such cases it has seemed to me that more frequently than otherwise is added also the grandfather's name.

Marriage.—The price of a wife is 28 goats and sheep. If the wife leaves her husband of her own accord he may keep the children, but has not the right to claim those which the woman may bear later, neither can he in such case claim return of dowry. If, however, instead of this he claims back what he paid for the woman he is entitled to the increase also. When the dowry is paid, the husband goes to the girl's village and fetches her away at night to his own village, on the way to which they must cohabit. On arrival at his village the husband kills a goat and carries it before the girl into the hut; according to others the goat is laid before the door of the hut and the girl must jump over it. A strip of the skin of this goat is then put on the wrist of the girl. During nine days after this no one may enter the village, and on the tenth day the couple go to the river to bathe.

A man may not marry a woman of his own clan, if he were to do so all their children would die, neither may he marry the daughter of a man with whom he has made blood brotherhood. On the death of a man his son may marry any of his wives excepting the big wife and his own mother. As a rule a man states before he dies which of his sons and wives shall be married to each other, but if this is not done they cannot be married until the elders of "Ukuu" have consented to it, in which case the brother of the deceased must first cohabit with the big wife. If this is not observed Makwa will ensue. If on a man's death neither he nor his wife have any near relations left, the woman can marry whom she pleases, but she must first have connection with a stranger. For this purpose a Mkamba is usually chosen, and as my informant added, "a Mkamba never refuses because he knows that he will get honey beer."

Death.—The ordinary mode of disposing of the dead is by throwing the bodies into the bush. This is done by the elders of "Ukuu" unless there is a son left, in which case he will do it, no matter how young he may be, and if he is too young to drag the corpse by a rope he will be aided by his mother. More important elders are buried before the entrance to the village. The body is laid outside the village with the head towards the doorway and on the right side, in which position it is left until next day, and then buried in the same position; in the same night the brother of the deceased cohabits with the widow.

The subsequent purification of the village is performed by the elders of Ukuu. A goat is slaughtered and eaten by the elders; the meat must all be eaten and the

bones may not be broken or cut. The bones are then thrown into the bush and the skin is haired and dressed by the deceased's brother, who gives it to the widow to wear. The following night the brother and widow must cohabit, and both their heads are then shaved. The purification is then completed, but until then no man may cohabit with any woman, or both will be stricken with Makwa; a case of this was seen in a man who looked rather as if he was suffering from leprosy. If a member of the village was away at the time of the purification he may not enter the enclosure until the elders of Ukuu have killed a goat and smeared the contents of the stomach before his mother's hut. A non-observance of this results in Makwa, but there is no prohibition against his returning and entering the village before the purification is complete.

Circumcision.—All Theraka are circumcised; the act is called "Nyumbula" or "Kutana." The ceremony takes place every year before the commencement of the autumn rains, and seems to consist very largely in drinking. The liquor is supplied by the mothers of those about to be circumcised, five bowls of honey beer and three clay jars of Mawelee beer being given to the elders, while the young men receive the same and drink theirs apart from the elders. When a boy is being circumcised and happens to be touched or struck by a man, he takes that man's name in place of his own, and is regarded very much as his son; it should be noted that to strike or harm a boy under the same circumstances is a grave offence among the Akamba, which may possibly be derived from the same or a similar custom.

Blood Brotherhood.—When two men wish to make close friendship, they make an exchange of bulls, of which the owner of each gets the head and the skin. Blood brotherhood may after this be formed by both taking the oath of Muma to be faithful to each other. This, if ever broken, will result in the death of the one breaking faith, together with all his family. On account of the prohibition against the children of blood brothers marrying, the Theraka say that they never make blood brotherhood with members of other clans, and being an almost senseless undertaking between members of one clan it is rarely made with anyone but a foreigner.

When a hut is built, the same observance is necessary as among the Akamba, otherwise all manner of ill-luck will befall the inmates. Most villages have two entrances because it is bad to enter and leave by the same entrance, presumably because ill-luck remains at the gateway and may be picked up again on going out.

The number seven is very unlucky, and the same rule applies to work done during a certain number of days, as among the Akamba.

When grain is sown it must be given out to the women by the father of the village, otherwise he cannot eat of the harvest and would fall ill and die were he to do so.

The learning of the customs belongs to the elders of Ukuu here also, and fees are paid to them for their instruction, but the curing of Makwa is not known to them and requires the aid of a medicine man.

The only causes of Makwa which I have discovered as yet are those already mentioned. The elders have told me that there are no others, but whether this is so I do not feel at all assured of. Makwa being apparently more the sphere of the medicine man, it is probable that such a man would be the best authority of whom to enquire regarding this subject.

It would be curious that while the Akikuyu have such a large number of causes for Makwa, the Theraka should have fewer than the Akamba even; it seems otherwise rather that the belief in this affliction has spread from the Akikuyu and diminishes in importance as one goes southwards.

MEDICINE MEN AND RELIGION.

According to the Akamba, the Theraka are much versed in the arts of medicine and witchcraft. Medicine men seem to be pretty numerous and the Theraka certainly appear to be proficient in knowledge and use of poisons, but the ideas of the Akamba regarding their neighbours in this respect are very much exaggerated. It strikes one rather, however, that among the Theraka almost every man is something of a medicine man, and charms and medicines of every sort will be found in almost every village.

At one I saw two halves of a baobab tree fruit pierced inside with a network of acacia thorns intended to keep out witchcraft. Another, the object of which was to bar my entrance to a deserted village, consisted of a number of odds and ends placed in a bag hung on a tree, including an old pipe and a small tortoise shell stuffed with some herbs; this was enormously feared by my Akamba, who could not be got to stay near it. Others were horns of all sorts placed on the paths with ashes strewed round them.

Spirits abound in Theraka as in Ukamba and seem always to be situated on the tops of hills where sacrifices are taken; best known of these is, I believe, a rocky hill-top called Siri Etumo.

Particular places of sacrifice do not seem to exist, nor are there any Mathembo, or elders answering to those of Mathembo, among the Akamba, so that there are, so far as I can learn, only two classes of elders, viz., those of Kiama and Ukuu.

The above is all I have been able to learn in regard to the Theraka. It is very little, of course, but since it has been collected in the course of two trips to this country only, during the first of which the people were bent more on hostilities than on the display of friendship, my opportunities of collecting information have been few. Yet even on better acquaintance it will be a considerable time before they overcome their natural timidity and feeling of reserve resulting from their primitive mode of life. They are a people chiefly interesting, as it seemed to me, on account of their peculiar mixture between the Akikuyu and Akamba. It may be noted that a few of their customs are strangely indefinite, such as the compensation paid for murder and the right of young men to drink intoxicating liquors. My

information on these two points, as well as one or two others too vaguely understood by me to record, has been obtained from prominent elders who particularly latterly seemed most friendly inclined, and I am unable to explain the variations unless it is that there are two or more sections of the Theraka who vary slightly in customs. Opportunity has not presented itself to me to investigate this question; it would be curious enough to find such a division in so small a tribe, yet it should be remembered that there are two sections of the Akikuyu distinguished by the mode of circumcising, and it may be that something analogous to this exists among the Theraka, and for future researches into the customs of the Theraka it will be as well not to lose sight of such points in regard to which present obtainable information varies.

ON SOME BRONZE AGE AND JUTISH BONES FROM BROADSTAIRS,
WITH TYPE CONTOURS OF ALL THE BRONZE AGE SKULLS IN
THE ROYAL COLLEGE OF SURGEONS MUSEUM.

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THE following paper is meant, in the first place, to describe the details of some bones found at Valetta House, Broadstairs, in 1911, but, as some of these are undoubtedly of bronze age people, I have measured as many other bronze age skulls as I could, for comparison. Since the Broadstairs bones are now placed in the museum of the Royal College of Surgeons, this paper is, in part, a description of the bronze age bones therein at the present time.

Among the bronze age burials at Broadstairs were those of several Saxons, accompanied by many arms, coins, and ornaments.

These skeletons, coming from the Isle of Thanet, I have ventured to call Jutish, and I have been able to compare them with those of another Jutish burial ground near Folkestone, an account of which I published in this Journal, vol. XLI, 1911, p. 101.

The interesting archæological details of this find at Broadstairs will be submitted to the Society of Antiquaries for publication by Mr. H. Hurd, the borough surveyor, and it is entirely owing to his experience and energy that these valuable remains have been preserved.

The thanks of anthropologists and archæologists are also due to Miss Bartrum, of Valetta House, who allowed her lawn to be cut to pieces during the excavations, and gave the most generous help to those working thereat. Among the details with which Mr. Hurd will deal is the fact that the nine bronze age bodies were buried in the usual flexed position, with one exception on their right sides, round the inner of two concentric circular trenches (*see* Fig. 1), but only one article of grave furniture was found with them, apart from some questionable flint implements, and that was a broken cinerary urn identified by the British Museum experts as of late bronze age. No bronze implements of any sort were found, but according to Canon Greenwell (*British Barrows*, London, 1877), it is quite a common thing not to find them.

In any case the double circular trench, the flexed position of the bodies on their sides, and the characters of the perfect and fragmentary skulls, leave no doubt that we are dealing with the remains of people of the bronze race, by which we do

not necessarily mean people who were using bronze implements at the time, but men of the comparatively tall race with high, short heads and rugged facial outlines who buried their dead in the flexed position, when they did not burn them, and

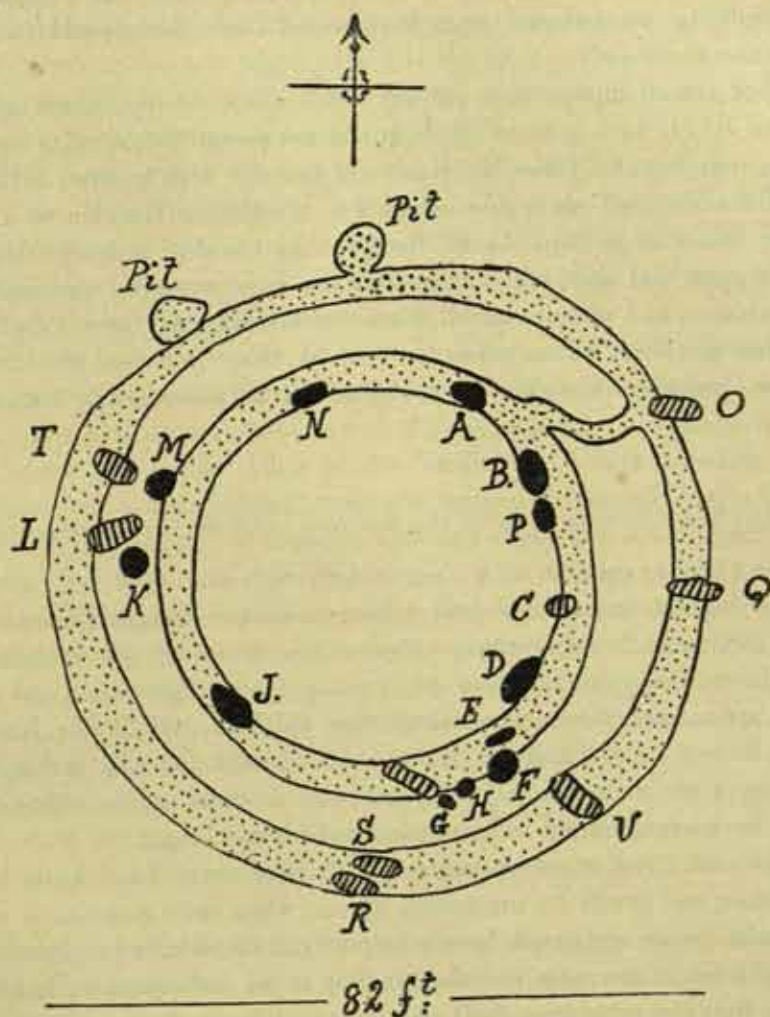


FIG. 1.—BRONZE AGE BURIAL GROUND AT BROADSTAIRS.

BRONZE AGE BURIALS, BLACK.
JUTISH " STRIPED.

doubtless invaded this country from the Continent and mixed with rather than overcame the former neolithic inhabitants. This bronze race, possibly identical with the Goidelic or Q Celts, is the one which is found in the round barrows, and it is also the one which is by many believed to have built Stonehenge and other megalithic monuments. In this connection it is interesting to notice how the scheme of the concentric circles is repeated at Broadstairs.

As this is the first occasion on which the skeletons of bronze age men have been found in Kent, I have tried to save every available scrap of bone, and to have

it safely stored in the museum of the Royal College of Surgeons for comparison with future finds. Only a very small proportion of the nine bodies are available for accurate measurement, but this is hardly surprising when it is remembered that in all probability two thousand years have passed since these people lived and dug their circular trenches.

It is, of course, impossible to put any definite date to the bronze age burials, but for the Jutish there is some real help, because several Saxon coins (*sceattas*), of two types, were found. These Mr. Hurd will describe with greater authority, but I gather from him that one type is assigned at the British Museum to A.D. 550 to 600, while the other is from A.D. 600 to 650. As the Jutish bodies were buried with their arms and ornaments in exactly the same extended way and with the same orientation, and absence of all Christian emblems, as those found in other Kentish burial places, we may assume, I think, that they were pre-Christian, in which case, probably, the date of A.D. 600 will be more nearly accurate than A.D. 650.

Individual Characteristics of the Skeletons available for Examination.

A. was a bronze age man with a particularly high skull (136 mm., *see* Table 2). This is the highest bronze age skull I have measured, though Rolleston figures a higher (138 mm.) from Cowlam. Almost the whole of his skeleton is set up in the Royal College of Surgeons Museum and his height, when the vertebral column is articulated, the intervertebral discs supplied and 20 mm. allowed for soft parts, is over 5 feet 9 inches. He was an old man and had suffered greatly from osteitis of the vertebral column, pelvis, and shoulder girdle. This, however, would not have increased but rather diminished his real height.

His femoral, tibial, humeral, and radial lengths would have made him only 5 feet 7 inches, and it will be interesting to see, when more material is available, whether these bronze age people have a longer axial skeleton in proportion to their limbs than have other races or whether this is an individual variation. It is conceivable that the extra high skull may make a difference.

There was no platymeria or platycnemia. The left femur was markedly twisted, and the left tibia less so, though on the right side this could not be estimated.

The individual was evidently a powerfully built man with a shoulder breadth, gauged by the clavicle, of some 14½ inches.

B. was a bronze age man, of whose skull only the calvaria remained. Since neither the auditory meatus nor basion were present, I could not measure it satisfactorily, but it looked rather a longer head than that of either A. or K. By the femur and tibia he should be about 164 cm. high (5 ft. 4½ in.), but by his radius, which was perfect, 168 cm. (5 ft. 6 in.). This discrepancy will be noticed in K. also and is explained, I believe, by these people having a longer forearm in proportion than have most modern skeletons.

His left femur was distinctly platymeric, but not his right, while both his tibiae were very platynemic. I could not measure the torsion of his femora, but his tibiae were not particularly twisted. The thickness of his femur suggests that he was a powerful man, though his humeri were too fragmentary for measuring.

K. was a bronze age man, whose skull was the most perfect of all; its measurements show that it was typical of the bronze age, though it was rather more prognathous than the average (index 93 against 97).

From the femur length this man should have been about 5 ft. 4 in., from the tibia 5 ft. 5 in., from the humerus 5 ft. 3 in., and from the radius 5 ft. 6½ in. (*see B.*). His clavicle points to his having been about 15½ in. across the chest. He was distinctly platymeric, though not platynemic. His left femur and tibia were markedly twisted, the right femur much less so.

M. was a bronze age woman of poor physique. Her skull was fragmentary, but the frontal bone showed that the supraciliary eminences were well marked for a woman. The least frontal breadth was 101 mm., against the average of 102 mm. for seven bronze age males. Parts of the femur, tibia, humerus, radius, ulna, and clavicles were found, and, judging from the estimated femoral length, the woman was about 5 ft. 3 in. tall. The humerus, although slight, had a well-marked deltoid impression.

E. was a young male Jute, with a long, narrow, metopic cranium. The teeth were fairly perfect and little worn, the last molar present. The height, estimated from his femur, was about 5 ft. 5½ in. There was distinct platymeria, and some platynemia. The remains of his clavicles showed that the bones had been long and slender, but their exact length could not be estimated.

I. was a male Jute, probably at or beyond middle age; the teeth were perfect, but much worn, the maxilla, mandible and temporal bones present. Two lumbar vertebrae were fused by spondylitis, though otherwise there was little osteitis in the skeleton.

The height, estimated from the femur, was about 5 ft. 5½ in. There was no platymeria or platynemia. From the clavicle the man was about 13½ in. across the shoulders, but the marked bowing of the bone points to considerable muscular development.

L. was a Jutish woman. Nothing could be made of the remnants of the skull, but the femur was large-headed for a female. The os innominatum, on the other hand, had distinct feminine characteristics. I have regarded this skeleton as that of a woman, because a chatelaine was found with it, and this, as far as my experience goes, is a very definite sign. The height, judged from the femur, was about 5 ft. 6¼ in. (168 cm.), which is the male average. From the tibia she would have been a trifle shorter. There was no platymeria or platynemia. From the number of Saxon coins found with her, she was possibly a woman of some importance.

O. was a male Jute, apparently of advanced age, because the oblique and maximal lengths of his femur were the same. From his femur he was about

5 ft. 6½ in. (168 cm.), from his tibia a little shorter. He was platynemic, but not platymeric. His shoulder width was about 14 inches. He was found with a spear and shield boss, which alone are enough to settle the question of sex. His left tibia had been broken during life, and set fairly well.

Q. was a female Jute. The pubic portion of the os innominatum was present and showed distinct female characteristics. The skull was singularly high, and the face long for a Jute; the lower jaw lacked also the characteristic square appearance when looked at from in front. From her femur she was about 5 ft. 5½ in. (166 cm.) tall, and the estimation from the tibia agrees with this.

There is slight platynemia, but no platymeria. Her clavicle was long and markedly curved, and she was evidently a tall, broad-shouldered (14½ in.) woman.

S. was a Jutish woman with the characteristic face and skull associated with Saxons. Her height, estimated from the femur, was about 5 ft. 5½ in. (166 cm.), but from the tibia somewhat taller (169 cm.), and from the humerus, shorter (164 cm.). She was distinctly platymeric and platynemic. Her shoulder breadth was about 14 in.

THE SKULL.

Norma lateralis of Bronze Age Skulls.

Table 1 shows the measurements of the side view of the only two Broadstairs bronze age skulls (A. and K.) which were perfect enough to be measured, of seven undoubted bronze age skulls in the museum of the Royal College of Surgeons, and of another seven bronze age skulls figured in Greenwell and Rolleston's book on *British Barrows* (London, 1877). These latter are available for measurement, because I find by checking the recorded measurements that they are all drawn to a scale of one-third the natural size. All these skulls were those of males in my opinion, as well as in the opinion of other anthropologists who have examined them; indeed, I can find only one record of a perfect female skull, and that is the one from Flixton Wold, figured on p. 574 of Greenwell and Rolleston's work. If we may regard this single specimen as typical of the bronze age female skull form it points strongly to the probability that the sixteen in my table are all males.

The method of measuring this view of the skull is one which I submitted to the Royal Anthropological Institute in a "Report on the Rothwell Crania" (*Journ. Roy. Anthropol. Inst.*, vol. xl, 1910, p. 503) with some slight modifications and additions which experience has suggested since.

The skull is orientated by using the Frankfurt plane, though this does not matter in the side view; the measurements, however, are all taken from the centre of the external auditory meatus in order that they may be compared with those of living heads. This must be remembered in comparing the auricular height of these skulls with others which are measured from the top of the external auditory meatus since it gives, I find, an average addition of 6 mm. to the height. The way in which I worked was to project the contour of each skull on to a sheet

TABLE 1.—MEASUREMENTS OF THE NORMA LATERALIS OF 16 BRONZE AGE MALE CRANIA.

| | A. Broad- stairs. | K. Broad- stairs. | 282.1 R.C.S. | 277.1 R.C.S. | Rolleston. Weaver- thorpe. | Hesler- ton. | Ilderton. | Cowlam. | Rud- stone. | Rud- stone. | Castle Carrock. | 292.1 R.C.S. | 293.1 R.C.S. | 294.1 R.C.S. | 279.1 R.C.S. | 297.1 R.C.S. | Average. | Number of observations. |
|--|-------------------------|-------------------------|-----------------|-----------------|----------------------------------|-----------------|-----------|----------|----------------|----------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|----------------------------|
| Tip of nasal bone (N.B.) | — | 81° 108 | 86° 105 | 88° 100 | 84° 99 | 85° 96 | 75° 99 | 85° 108 | — | — | 85° 99 | 86° 109 | 77° 106 | — | — | — | 83° 103 | 10 |
| Nasion (N.) | 74° 100 | 76° 107 | 77° 95 | 76° 97 | 75° 99 | 78° 96 | 70° 99 | 76° 105 | 70° 102 | 70° 105 | 78° 93 | 79° 105 | 67° 100 | 79° 102 | 77° 94 | 73° 92 | 75° 100 | 16 |
| Glabella (Gl.) | 68° 111 | 71° 117 | 70° 103 | 70° 105 | 67° 110 | 72° 104 | 65° 111 | 69° 117 | 62° 113 | 62° 120 | 72° 105 | 75° 113 | 62° 110 | 73° 106 | 69° 104 | 68° 104 | 68° 110 | 16 |
| Ophryon (Oph.) | 60° 114 | 63° 116 | 63° 103 | 60° 108 | 58° 113 | 64° 107 | 56° 108 | 63° 117 | 54° 113 | 54° 114 | 62° 108 | 68° 112 | 54° 115 | 62° 106 | 62° 109 | 60° 104 | 60° 110 | 16 |
| Frontal eminence (F.E.) | 53° 124 | 55° 124 | 51° 111 | 48° 119 | 49° 122 | 53° 113 | 39° 120 | 54° 126 | 43° 116 | 43° 120 | 50° 120 | 56° 118 | 42° 127 | 51° 112 | 55° 118 | 49° 117 | 50° 119 | 16 |
| 30° ... | 136 | 131 | 117 | 123 | 128 | 116 | 126 | 138 | 116 | 120 | 123 | 118 | 130 | 113 | 127 | 125 | 124 | 16 |
| Bregma (Br.) | 17° 136 | 18° 130 | 13° 116 | 7° 120 | 16° 128 | 22° 116 | 15° 126 | 20° 138 | 8° 116 | 8° 123 | 23° 123 | 20° 115 | 5° 126 | 16° 113 | 17° 128 | 14° 126 | 15° 124 | 16 |
| 340° ... | 122 | 117 | 116 | 111 | 122 | 113 | 123 | 135 | 119 | 123 | 125 | 105 | 123 | 107 | 125 | 123 | 119 | 16 |
| Lambda (L.) | 319° 100 | 325° 101 | 304° 96 | 317° 90 | 311° 99 | 318° 96 | 316° 108 | 315° 111 | 312° 102 | 312° 105 | 310° 106 | 310° 97 | 307° 103 | 321° 96 | 310° 106 | 312° 101 | 314° 101 | 16 |
| Midway between Lambda and Inion (L.I.) | 287° 93 | 302° 84 | 289° 90 | 298° 83 | 293° 84 | 302° 84 | 297° 96 | 294° 96 | 298° 90 | 298° 93 | 297° 99 | 291° 79 | 289° 96 | 295° 85 | 294° 97 | 295° 90 | 294° 90 | 16 |
| Inion (I.) | 256° 72 | 279° 68 | 273° 78 | 282° 73 | 274° 64 | 285° 75 | 278° 71 | 273° 78 | 285° 64 | 285° 78 | 284° 84 | 272° 68 | 270° 80 | 268° 70 | 278° 84 | 277° 72 | 276° 74 | 16 |
| 270° ... | — | 57 | 75 | 62 | 49 | 49 | 69 | 66 | 58 | 60 | 63 | 65 | — | — | 63 | 60 | 61 | 13 |
| Tip of mastoid process (M.) | 200° 29 | 198° 26 | 199° 22 | 209° 21 | 204° 23 | 207° 26 | 210° 21 | 199° 27 | 202° 23 | 202° 27 | 203° 27 | 195° 28 | 196° 26 | 210° 24 | 209° 20 | 205° 23 | 203° 25 | 16 |
| Angle of jaw (A.) | 164° 58 | 163° 65 | 167° 74 | — | 164° 70 | 171° 49 | 168° 66 | 176° 69 | 170° 41 | 168° 42 | 175° 54 | 168° 60 | 171° 57 | 158° 79 | — | — | 168° 60 | 13 |
| Mental eminence (M.E.) | 127° 118 | 136° 130 | 136° 126 | — | 134° 116 | 143° 116 | 138° 123 | 144° 126 | 132° 113 | 132° 117 | 143° 120 | 136° 126 | 139° 122 | 132° 139 | — | — | 136° 122 | 13 |
| Lower incisor point (L.I.P.) | 117° 104 | 123° 116 | 125° 109 | — | 116° 104 | 127° 99 | 124° 105 | 128° 111 | 121° 102 | 121° 105 | 131° 100 | 126° 110 | 128° 99 | 123° 128 | — | — | 124° 107 | 13 |
| Upper incisor point (U.I.P.) | — | 112° 115 | 114° 103 | — | 109° 101 | 117° 96 | 113° 99 | 117° 108 | 110° 102 | 110° 105 | 119° 99 | 112° 109 | 117° 92 | 112° 113 | — | 118° 96 | 114° 103 | 13 |
| Anterior nasal spine (A.N.S.) | — | 104° 106 | 85° 96 | — | 99° 93 | 108° 93 | 100° 93 | 107° 102 | 99° 96 | 99° 93 | 109° 90 | 105° 106 | 106° 94 | 108° 105 | — | 108° 94 | 103° 97 | 13 |

1911, p. 139). The results obtained by both our methods are surprisingly alike, and I have only hesitated to adopt his because, in my hands, my own saves time, while every measurement and angle may be repeated in the living head by means of a special craniometer which is figured in *The Journal of Anatomy*, vol. xlv, p. 397.

I regret that Dr. Crewdson Bennington evidently never saw my method, and that his untimely death gave him no chance of criticising it, but it is a pleasure to think that we both felt the same want of something more definite than pages of numerical averages or the reproduction of one, two or three skulls as types of a large collection, because no single skull ever reproduces the type in every detail.

With these preliminary remarks I turn to the tracings.

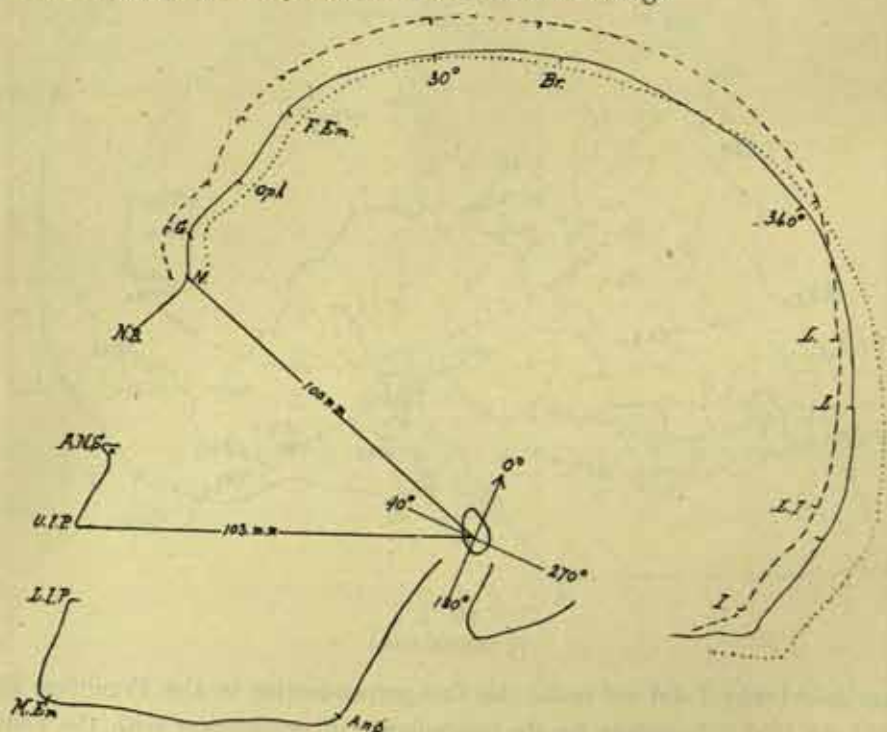


FIG. 3.
($\frac{1}{2}$ natural size.)

Fig. 2 is a direct dioptraphic projection of skulls A. and K. from Broadstairs. It will be noticed that K. is represented by a continuous line, A. by a dotted one. The various lengths and angles recorded under K. in Table 1 are shown diagrammatically here.

The auricular height index of K., obtained by dividing the height from the centre of the external auditory meatus to the bregma by the ophryo-maximal length is 73, while, if the glabello-maximal length is taken as the division, as is the modern method, the index is 71. A. is a still higher skull, in it the auricular height obtained with the ophryo-maximal length is 78, with the glabello-maximal is 76.

TABLE 2.
MEASUREMENTS OF THE NORMA LATERALIS OF CROSS BREEDS AND JUTES.

| | Cross between Bronze Age and Neolithic. | | | | Broadstairs. | | | Jutes. | | |
|---------------------------------|---|-----------------|-----------------|----------|--------------|---------|--------------|--------------|----------|--------------|
| | 283·1 R.C.S. | 291·1 R.C.S. | 296·1 R.C.S. | Average. | Broadstairs. | | Average ♂ | Broadstairs. | | Average ♀ |
| | | | | | O. (♂) | E. (♂) | | S. (♀) | Q. (♀) | |
| Tip of Nasal Bone ... | ... | ... | 84° 104 | 84° 104 | — | — | — | 87° 98 | — | — |
| Nasion ... | 71° 97 | 75° 98 | 74° 93 | 73° 96 | 71° 99 | 75° 100 | 73° 100 | 74° 91 | 75° 93 | 75° 92 |
| Glabella ... | 65° 103 | 70° 110 | 69° 105 | 68° 106 | 63° 110 | 70° 110 | 66° 110 | 69° 95 | 68° 103 | 69° 99 |
| Ophryon ... | 56° 99 | 60° 112 | 61° 107 | 59° 106 | 55° 111 | 64° 114 | 59° 113 | 60° 98 | 60° 110 | 60° 104 |
| Frontal Eminence ... | 45° 115 | 50° 118 | 51° 117 | 49° 17 | 48° 119 | 56° 122 | 52° 120 | 52° 105 | 51° 117 | 52° 111 |
| 30° ... | 118 | 124 | 121 | 121 | 125 | 122 | 124 | 110 | 121 | 116 |
| Bregma ... | 11° 119 | 19° 124 | 19° 122 | 16° 122 | 12° 125 | 13° 117 | 12° 121 | 11° 110 | 12° 121 | 12° 116 |
| 340° ... | 121 | 120 | 123 | 121 | 124 | 106 | 115 | 112 | 121 | 117 |
| Lambda ... | 305° 109 | 321° 104 | 316° 113 | 314° 109 | 304° 102 | 313° 92 | 308° 97 | 306° 101 | 305° 100 | 306° 101 |
| Midway between Lambda and Inion | 288° 105 | 302° 98 | 295° 101 | 295° 101 | 289° 90 | 290° 86 | 290° 88 | 290° 92 | 290° 93 | 290° 93 |
| Inion ... | 271° 93 | 283° 82 | 275° 78 | 276° 84 | 275° 72 | 267° 74 | 271° 73 | 274° 81 | 276° 81 | 275° 81 |
| 270° ... | 88 | 64 | 69 | 74 | 61 | — | 61 | 75 | 70 | 73 |
| Tip of Mastoid Process ... | — | 207° 23 | 202° 23 | 205° 23 | 195° 24 | 200° 21 | 197° 23 | 199° 19 | 198° 23 | 199° 21 |
| Angle of Jaw ... | — | — | — | — | — | — | — | 166° 58 | 167° 55 | 167° 57 |
| Mental Eminence ... | — | — | — | — | — | — | — | 134° 106 | 132° 132 | 133° 119 |
| Lower Incisor Point ... | — | — | — | — | — | — | — | 122° 92 | 120° 116 | 121° 104 |
| Upper Incisor Point ... | — | 112° 100 | 114° 96 | 113° 98 | — | — | — | 114° 93 | 112° 106 | 113° 100 |
| Anterior nasal spine ... | — | 102° 92 | 105° 92 | 104° 92 | — | — | — | 104° 88 | 107° 95 | 106° 92 |

On looking at these two contours in Fig. 2, any craniologist will, I think, at once admit that, in their great height, as well as in their ruggedness and the development of the supraciliary prominence, these Broadstairs skulls are typical of those of the bronze age.

Fig. 3 shows three contours, the higher interrupted line is that of the mean of A. and K., the two Broadstairs skulls. The continuous line is that of sixteen bronze age skulls which I have been able to measure, some of them, through the kindness of Professor A. Keith, in the museum of the Royal College of Surgeons, some from the scale drawings in Greenwell and Rolleston's book, and two (A. and K.) from Broadstairs. The dotted line is the mean of three so-called

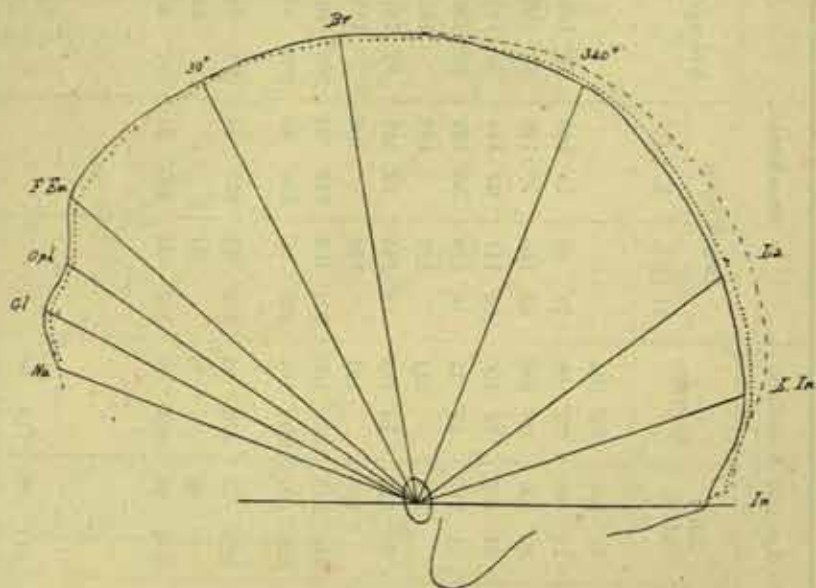


FIG. 4.

($\frac{1}{2}$ natural size.)

bronze age skulls in the College of Surgeons Museum, which I am convinced are not those of pure bronze age people, but cross breeds between them and the long-headed neolithic people with whom they intermarried. It is quite well known that long heads are often found associated with the short, high heads in round barrows, though the long neolithic barrows always contain long heads. The measurements of these three skulls will be found in Table 2.

The average ophryo-maximal auricular height index of the two Broadstairs skulls is 75, the glabello-maximal 73, while in the whole sixteen bronze age skulls the indices are respectively 70 and 68. This, of course, shows, as is perfectly clear from the contours, that the two Kentish skulls are higher in proportion to their length than are those of average bronze age people; it also, incidentally, shows how much more real information is given by the contour tracings than by the numerical indices; for instance, it is clear at a glance that the three contours do not differ only in size, but that different parts of the skull are specially

developed, the frontal region in the bronze age, particularly the Kentish, and the occipital in the cross-breeds. It is also clear from the tracings in Fig. 3 that the three cross-bred skulls are on the average a good deal longer and a little lower than are those of the bronze age. Their indices are respectively 67 and 65. It must, of course, be remembered that in using these indices for comparison with those of other observers, I am working from the middle and not from the top of the auditory meatus; this, as I have said, increases the height by an average of 6 mm.

Norma lateralis of Jutish Skulls.

Table 2, besides showing the measurements of the three hybrids from the side, shows those of four Jutes, two male and two female, with their respective averages. Taking the male Jutes first, Fig. 4 shows three superimposed tracings; of these the

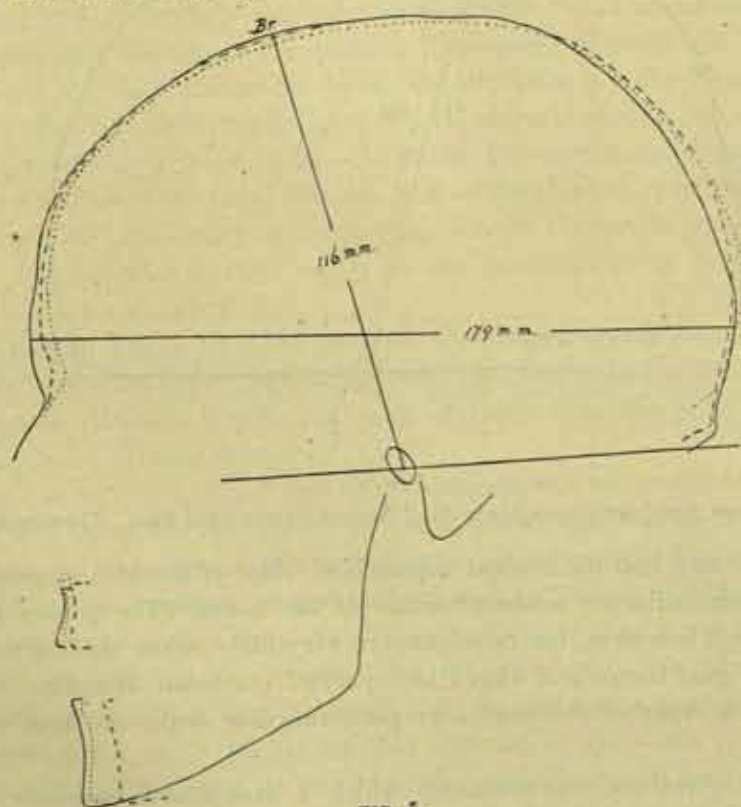


FIG. 5.

2 Broadstairs ♀ Jutes (continuous line); 2 Folkestone ♀ Jutes (dotted line); 7 other ♀ Saxons (interrupted line). ($\frac{1}{2}$ natural size.)

continuous line gives the average contour of the two Broadstairs Jutes, the dotted line is the average of these two and of a male Jute from Folkestone (*Journ. Roy. Anthropol. Inst.*, vol. xli, 1911, p. 101), while the third or interrupted contour is the average of thirteen other Saxons from various parts of England. From this small series of Jutes I dare not deduce anything but merely record it for future reference.

Fig. 5 gives a comparison of the average contours of the two female Jutes from Broadstairs, of two from Folkestone and of seven other female Saxons; the similarity of these contours is very striking. The auricular height index of the male Broadstairs Jutes is, glabello-maximal 66, ophryo-maximal 67, while that of the thirteen other Saxons is 65 and 66 respectively. In the females the Broadstairs Jutes had a glabello-maximal index of 65, and an ophryo-maximal of 65, while the indices of the seven other female Saxons were respectively 65 and 66. Fig. 6 will probably interest anyone who wishes to compare the side views of the bronze age and Saxon crania. It is derived from the greatest mass of data we possess at present, and probably will not vary very much with the addition of more.

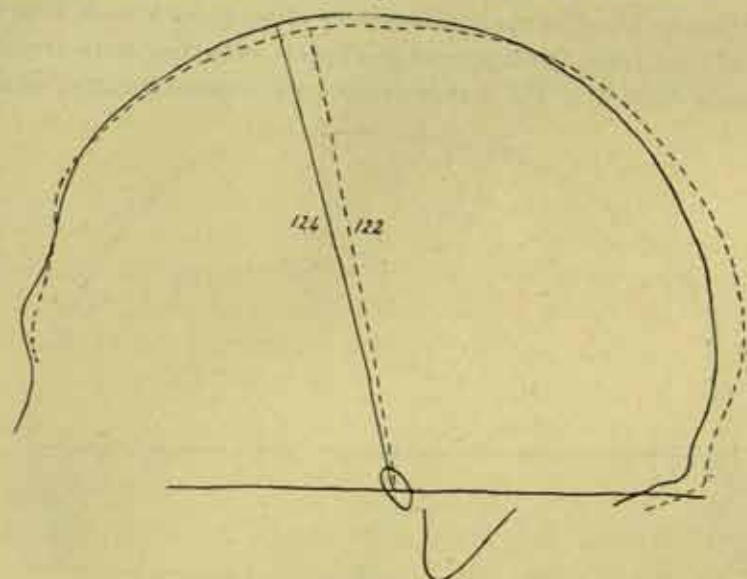


FIG. 6.

16 ♂ Bronze Age (continuous line); 13 ♂ Saxons (interrupted line). ($\frac{1}{2}$ natural size.)

It shows very well the marked supraorbital ridge of the bronze age skull and the large frontal eminence so characteristic of the Saxon. The greater length of the Saxon skull is evident, but in height it is very little below that of the bronze age. This is good instance of what I have pointed out before that those who, like Horton Smith, describe the Saxons as possessing low skulls do them a serious injustice.

Table 3 gives the measurements which I have found necessary for the production of a type contour of the facial aspect of a series of skulls. In studying this table, Fig. 7 should be referred to, since it is the table reduced to a diagram. In this diagram I have taken the nasion (N.) as the point of coincidence in superimposing tracings, and all the other measurements have their distances above or below it recorded in the column marked M. of the table as well as near the mid line of the figure. Take, for example, the localization of the external angular process; the table shows that its average position in seven male bronze age skulls is 7 mm. vertically below N., and that there is a breadth of 100 mm. between the

processes on the right and left sides. This means that if we are content to construct a perfectly symmetrical face contour we must draw a line at right angles to the vertical one, 7 mm. below N., and measure 50 mm. along this on each side of the median vertical line.

But should we be content with a symmetrical contour when it would be possible to record any asymmetry by taking a separate measurement on either side of the mid line? I now think that asymmetry is so difficult a subject to get any two observers to agree upon that it is better left alone when the type of a series of long-buried skulls is being reconstructed. It is a question which asks so many considerations and allowances that it seems to demand a paper to itself alone and, in addition to this, the superimposition and comparison of contours is very hard unless they are made artificially symmetrical.

Of course it is of the first importance that, before the projection is traced, each skull should be most carefully orientated and for this I find a number of plumb lines hanging from the edge of the Martin's dioptograph most useful; they can be fastened wherever they are wanted by a dab of plasticine. The Frankfurt plane must, of course, be perfectly vertical and so must the mid sagittal line of the vault. It is the impossibility of knowing how the skulls in Greenwell and Rolleston's book were orientated before the facial, vertical, and occipital views were drawn which has prevented me from measuring and adding them to the rest of my series. This necessity for projecting at right angles to the Frankfurt plane does not apply, however, to the *norma lateralis*.

The study of Fig. 7 bears out what has been learnt already from Fig. 3. The Broadstairs crania are higher than the average, but their breadth is nearly the same except that K. (the only Broadstairs skull available from this point of view) is appreciably wider between the eyes.

It will be seen from Fig. 7 that eight measurements are considered necessary to record and reproduce the contour of the orbital margin, and it is very likely that more than this number might be well used. It must not be forgotten that the plane of the orbital opening slopes outward and backward, and that, therefore, when it is projected on to a flat surface it seems narrower than it really is by some 3 mm. In constructing the orbital index for comparison with others taken by direct measurement from the skull itself it is, for this reason, needful to take the actual orbital width, or, if this has not been recorded, to add 3 mm. to the average of the apparent orbital widths. In measuring the width of the orbit some craniologists measure from in front and others from behind the groove for the lacrimal sac. I measure in front for the two following reasons:—(1) the lacrimal sac is part of the orbital contents and (2) the lacrimal bone is so often damaged in old skulls that a large amount of valuable material would have to be set aside if it were depended upon. The width of the orbit I take as the greatest width parallel to the slope of the upper orbital margin, and by this means I get as nearly as I can the greatest width in the long axis of the orbit.

The orbital height I gain by taking the greatest height at right angles to the

TABLE 3.—MEASUREMENTS

| | Bronze Age. | | | | | | |
|--------------------------------|--------------|--------|----------|---------|---------|---------|--------|
| | Broadstairs. | | | R.C.S. | | | |
| | A. | K. | Average. | 293·1 | 292·1 | 277·1 | 282·1 |
| | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. |
| Supraorbital notch | 2·40 | 3·53 | 3·47 | 4·50 | 2·42 | 4·45 | 4·45 |
| Least frontal breadth | 17·101 | 13·108 | 15·104 | 7·109 | 10·104 | 15·93 | 17·95 |
| 2cm. above nasion | ·142 | ·145 | ·144 | ·151 | ·149 | ·145 | ·142 |
| 4cm. " " | ·141 | ·142 | ·142 | ·149 | ·134 | ·138 | ·137 |
| 6cm. " " | ·121 | ·121 | ·121 | ·111 | ·94 | ·111 | ·114 |
| 7cm. " " | ·104 | ·103 | ·104 | ·81 | ·53 | ·91 | ·89 |
| 8cm. " " | ·77 | ·73 | ·75 | ·32 | — | ·53 | ·56 |
| 9cm. " " | ·30 | — | ·15 | — | — | — | — |
| Vertex | 93 | 90 | 92 | 82 | 73 | 85 | 86 |
| E. angr. proc. | 6·101 | 5·105 | 6·103 | 10·94 | 10·107 | 5·97 | 6·96 |
| " skull br. | ·140 | ·143 | ·142 | ·152 | ·146 | ·144 | ·140 |
| Least interorbl. br. | — | 12·27 | 12·27 | 15·20 | 13·26 | 10·20 | 12·24 |
| Tip of nasal b. | — | 11 | 11 | 17 | 15 | 17 | 13 |
| Infraorbl. margin | 30 | 30 | 30 | 33 | 32 | 28 | 28 |
| Bizygomatic | 27·145 | 29·144 | 28·145 | 35·147 | 37·143 | 30 | 28·135 |
| Nasal spine | — | 48 | 48 | 67 | 53 | 48 | 45 |
| Inframalar | — | 51·102 | 51·102 | 54·84 | 53·88 | 50·90 | 50·95 |
| Maxy. tuby. | 66 | 68·67 | 67·67 | 73·53 | 72·68 | 62·58 | 62·63 |
| " mandibr. breadth | ·115 | ·104 | ·109 | ·115 | ·120 | ·102 | ·99 |
| Upper incisor point | 65 | 69 | 67 | 82 | 72 | 66 | 67 |
| Upper incisor edge | 75 | 78 | 77 | 90 | 83 | 72 | 75 |
| Lower incisor point | 85 | 88 | 87 | 99 | 92 | 87 | 88 |
| Mandibular angle | 98·114 | 99·107 | 99·111 | 103·113 | 100·128 | 100·108 | 99·97 |
| Lower chin level | 115·37 | 122·41 | 118·39 | 132·28 | 120·42 | 117·18 | 115·32 |
| Midway between two last | 107·74 | 110·83 | 109·78 | 118·87 | 110·88 | 108·64 | 107·72 |
| Point of chin | 114 | 120 | 117 | 131 | 119 | 116 | 113 |
| Orbital width—apparent | — | ·40 | ·40 | ·37 | ·40 | ·40 | ·38 |
| " " actual | — | ·44 | — | ·40 | ·43 | ·41 | ·40 |
| Orbital height | — | ·31 | ·31 | — | ·32 | ·31 | ·30 |
| Angle of supraorbital margin | 10° | 16° | 13° | 17° | 11° | 8° | 15° |
| Nasal width | — | ·26 | ·26 | ·23 | ·26 | ·23 | ·22 |

Bronze Age Skulls.

OF THE NORMA FACIALIS.

| | Average of seven Bronze skulls. | Cross between Bronze and Neolithic. | | | Average of three Cross- Bred. | Jutes. | | Average Jutes. |
|--------|--|--|--------|--------|--|--------|--------|-------------------|
| | | 291·1 | 283·1 | 296·1 | | S. ♀ | Q. ♀ | |
| 279·1 | | | | | | | | |
| M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. |
| — | 3·46 | 6·46 | 3·48 | 5·40 | 5·45 | 2·44 | 11·44 | 7·44 |
| 18·101 | 14·102 | 15·100 | 12·104 | 22·95 | 16·100 | 14·86 | 20·97 | 17·92 |
| ·145 | ·146 | ·145 | ·143 | ·140 | ·143 | ·141 | ·137 | ·139 |
| ·145 | ·141 | ·142 | ·140 | ·138 | ·140 | ·129 | ·139 | ·134 |
| ·136 | ·115 | ·126 | ·130 | ·120 | ·125 | ·97 | ·126 | ·112 |
| ·122 | ·92 | ·99 | ·118 | ·99 | ·105 | ·65 | ·112 | ·89 |
| ·101 | ·56 | ·79 | ·99 | ·65 | ·81 | ·0 | ·93 | ·47 |
| ·65 | — | ·0 | ·63 | ·0 | ·21 | ·0 | ·60 | — |
| 98 | 87 | 90 | 98 | 88 | 92 | 79 | 97 | 88 |
| 6·99 | 7·100 | 4·101 | 7·100 | 3·96 | 5·99 | 6·88 | 0·96 | 3·92 |
| ·144 | ·144 | ·139 | ·141 | ·141 | ·140 | ·145 | ·133 | ·139 |
| — | 12·23 | — | — | 13·18 | 13·18 | 12·18 | 12·20 | 12·19 |
| — | 15 | — | — | 18 | 18 | 21 | — | 21 |
| — | 30 | 28 | — | 28 | 28 | 32 | 25 | 29 |
| — | 32·142 | 30·135 | — | 28·134 | 29·135 | 28·143 | 20·130 | 24·137 |
| — | 52 | 45 | — | 49 | 47 | 50 | 49 | 50 |
| — | 52·92 | 42 | — | 46·84 | 44·84 | 50·90 | 42·86 | 46·88 |
| — | 67·62 | 65·70 | — | 65·60 | 65·65 | 65·47 | 63·64 | 64·56 |
| — | ·108 | — | — | — | — | ·114 | ·106 | ·110 |
| — | 71 | 65 | — | 65 | 65 | 66 | 63 | 65 |
| — | 80 | — | — | — | — | — | — | — |
| — | 91 | — | — | — | — | 78 | 81 | 80 |
| — | 100·111 | — | — | — | — | 97·96 | 97·88 | 97·92 |
| — | 121·32 | — | — | — | — | 105·25 | 114·0 | 110·13 |
| — | 111·79 | — | — | — | — | 101·65 | 105·70 | 103·68 |
| — | 120 | — | — | — | — | 105 | 114 | 110 |
| — | ·39 | — | — | — | — | ·36 | ·40 | ·38 |
| — | ·42 | — | — | — | — | ·39 | ·43 | ·41 |
| — | ·31 | ·34 | — | — | — | ·34 | ·35 | ·35 |
| — | 13° | 10° | 11° | — | — | 12° | 12° | 12° |
| — | ·25 | ·25 | — | — | — | ·22 | ·24 | ·23 |

long axis. I know that it has been suggested that the actual vertical height parallel to the mid line should be taken, but this may give a wrong idea of the actual height of the orbit unless the angle which the long axis makes is carefully recorded, because it is well known to everyone who has handled many skulls that in some the long axis of the orbit slopes downward and outward much more than in others. In order to reproduce this slope in my contours I always measure the angle which the upper margin of the orbit, external to the supra-orbital notch,

prognathism. It is always possible, however, to check the difference between the actual and the apparent height, by looking at the norma lateralis contour where the actual measurement is shown. I find that in these seven bronze age skulls the apparent nasal height shown in Fig. 7 is 2 mm. less than the actual as shown in Fig. 3.

The nasal index of these seven skulls, taken with the actual height, is 51.

It would be possible, by taking some extra measurements, to get the teeth into their real positions, but I hardly think it worth while in this series because so many of the teeth are missing. The teeth figured in Fig. 7 and the following contours of the norma facialis are therefore quite imaginary except for the length of the central upper incisors. In the lower jaw the breadth and eversion of the angles is evident, the sign of a powerful and well working masseter muscle.

Fig. 8 shows a comparison between the norma facialis of the seven bronze age skulls and that of eight male Anglo-Saxons from various parts of England in the

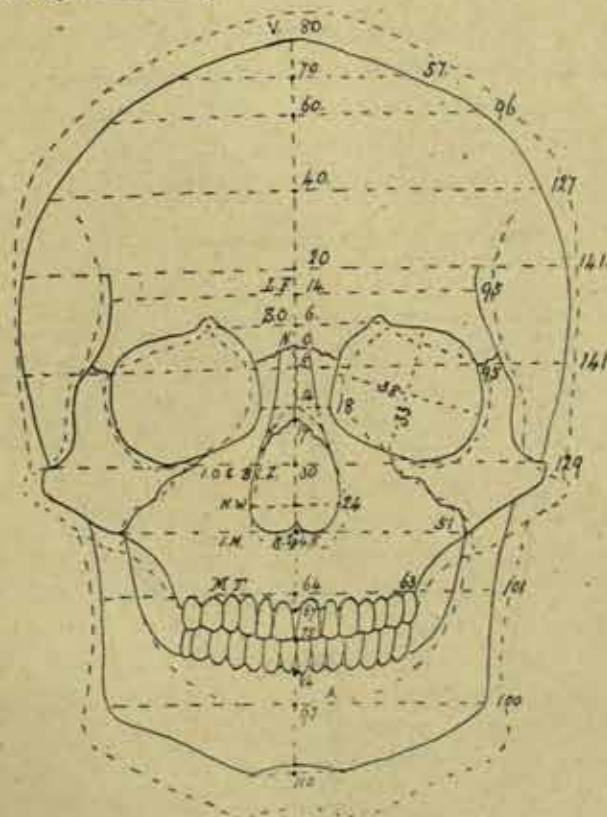


FIG. 8.

Average of 7 ♂ Bronze age (interrupted line); average of 8 ♂ Saxons (continuous line).
($\frac{1}{2}$ natural size.)

museum of the Royal College of Surgeons. This diagram certainly does not bear out the oft-repeated saying of "short head, short face and long head, long face," for it will be noticed that these long-headed Saxons have a much shorter face than the short-headed bronze age people.

The bronze age orbit in this series is slightly wider and decidedly less deep than that of the Saxon; the index of the latter is 80 against the bronze age 74.

The nasal index of the Saxons, obtained by adding 2 to the apparent nasal height and dividing the nasal width by this, is 46, while that of the bronze age people is forty-six but it is necessary to look at the contour in order to understand that the bronze age nose is both higher and wider than that of the Saxons.

Norma facialis of Jutes.

Unfortunately none of the male Jutish skulls were perfect enough for me to measure the face, but among the female Jutes there are two (Q. and S.) of which measurements are recorded (see Table 3). The type contour of these two is shown in Fig. 9 (interrupted line) where it is contrasted with a type contour of three other

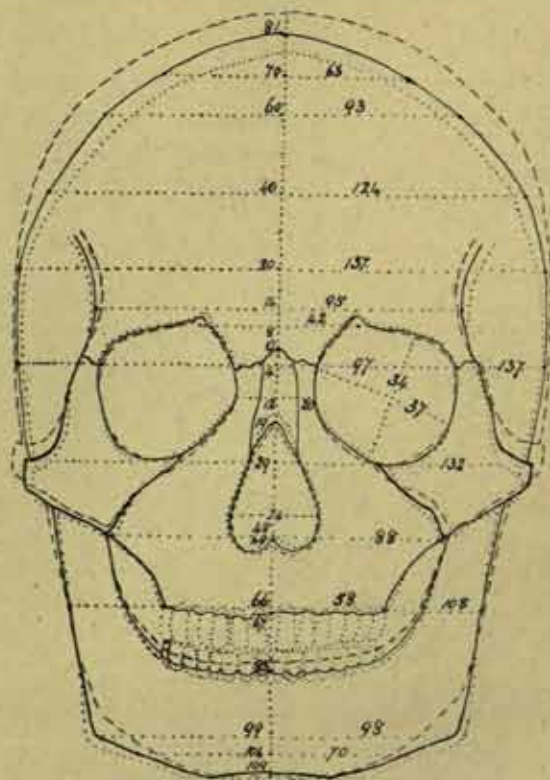


FIG. 9.

($\frac{1}{2}$ natural size.)

Jutish women (dotted line) found at Folkestone. The mean between these two (continuous line, Fig. 9) gained, of course, by multiplying the Folkestone measurements by 3 and the Broadstairs by 2 and then dividing the sum of these two quotients by 5, gives the nearest approach to the type contour of Jutish women that we have at present, but I do not know, nor, I think, does anyone know yet, how many individual skulls are necessary to give a fairly reliable type contour. In

my large series of Hythe measurements (*Journ. Roy. Anthropol. Inst.*, vol. xxxviii, 1908) I found that as far as length, breadth and height measurements were concerned any block of twenty skulls would give practically the same average as 500, while in blocks of ten the range of error was surprisingly small, but I feel sure that five is too small a number to generalize upon, because one strikingly abnormal skull is not toned down enough by the other four. We can, therefore, only take these five Jutish contours as a contribution to our knowledge and see what the type of the next five produces. These may turn up in East Kent or the Meon Valley in Hampshire any day.

In these Jutish women the orbital index is 85 and the nasal 47, I am therefore inclined to think that the greater depth of the orbit is a marked difference between the bronze age and Saxon peoples.

Norma verticalis of Bronze Age Skulls.

Table 4 gives the measurements which, I think, are as few as it is safe to use and at the same time numerous enough to allow a reconstruction to be made which

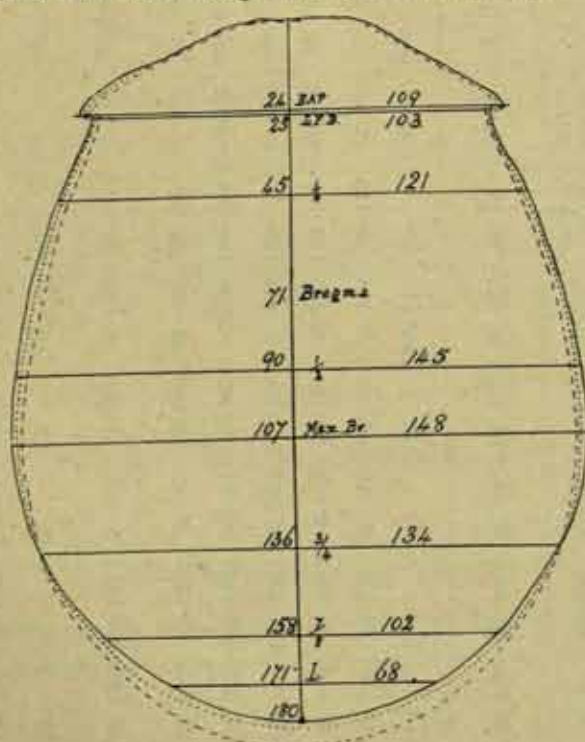


FIG. 10.

2 ♂ Broadstairs bronze age, A. and K. (dotted line); 8 ♂ bronze age (continuous line);
3 ♂ cross between bronze age and neolithic (interrupted line). ($\frac{1}{2}$ natural size.)

will coincide almost exactly with the original dioptraphic projection. Of course a projection of each skull has first to be made and, in doing this, the most accurate orientation is necessary since, by a slight tilting of the Frankfurt plane

TABLE 4.—MEASUREMENTS OF THE NORMA VERTICALIS.

| | Bronze Age. | | | | | | | | Bronze Age average. | Cross between Bronze and Neolithic. | | | Cross average. | Broadstairs Jutes. | |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------------|-------------------------|---------------------|-------------------------------------|-----------------|-----------------|----------------|--------------------|--------|
| | | | | | | | | | | | | | | | |
| | 293.1 R.C.S. | 292.1 R.C.S. | 277.1 R.C.S. | 282.1 R.C.S. | 297.1 R.C.S. | 279.1 R.C.S. | K. Broad- stairs. | A. Broad- stairs. | | 291.1 R.C.S. | 283.1 R.C.S. | 296.1 R.C.S. | | E. (♂) | Q. (♀) |
| | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | |
| Length ... | 183 | 179 | 174 | 183 | 172 | 186 | 185 | 179 | 180 | 182 | 190 | 187 | 182 | 182 | |
| ‡ length ... | 46.111 | 45.125 | 44.117 | 46.119 | 43.122 | 47.118 | 46.119 | 45.120 | 45.121 | 46.125 | 48.121 | 47.118 | 46.117 | 46.111 | |
| ‡ " ... | 92.152 | 90.142 | 87.143 | 92.143 | 86.150 | 93.145 | 93.141 | 90.142 | 90.145 | 91.143 | 95.142 | 94.140 | 91.135 | 91.137 | |
| ‡ " ... | 138.139 | 135.137 | 131.137 | 138.127 | 129.136 | 140.130 | 139.137 | 135.131 | 136.134 | 137.134 | 143.125 | 141.130 | 137.125 | 137.125 | |
| ‡ " ... | 161.101 | 157.107 | 153.110 | 161.94 | 151.103 | 164.99 | 162.105 | 158.97 | 158.102 | 160.101 | 167.92 | 167.103 | 160.95 | 160.91 | |
| Least frontal breadth | 25.107 | 22.101 | 29.101 | 25.95 | 19.100 | 28.107 | 29.108 | 25.105 | 25.103 | 22.100 | 25.104 | 25.100 | 25.105 | 26.97 | |
| Extl. angr. process | 25.109 | 22.106 | 25.107 | 24.105 | 17.107 | 25.112 | 25.117 | 25.111 | 24.109 | 25.106 | 25.110 | 26.106 | 26.111 | 27.103 | |
| Bregma ... | 73 | 72 | 75 | 72 | 77 | 68 | 70 | 62 | 71 | 76 | 82 | 76 | 75 | 77 | |
| Lambda ... | 175.66 | 165.88 | 165.73 | 176.54 | 169.50 | 177.65 | 174.72 | 168.77 | 171.68 | 175.59 | 184.54 | 180.77 | 180.63 | 168.72 | |
| Maximal breadth | 102.153 | 108.148 | 106.147 | 103.145 | 103.153 | 105.147 | 114.145 | 114.145 | 107.148 | 105.144 | 102.144 | 109.142 | 109.143 | 112.140 | |
| Parietal eminence | 131 | 135 | 121 | 126 | 111 | 125 | 130 | 125 | 126 | 137 | 130 | 134 | 132 | 120 | |

from the horizontal the appearance of the norma verticalis may be altered easily from one of Sergi's types to another.

The question of the mid line of the skull vault is a very difficult one and I do not propose to go very far into it in this paper. Theoretically the sagittal suture should make an ideal mid line, but practically there are often serious objections to using it, as a line prolonged forward from it may cut the face, far from the middle line. The method I have used is to have a plumb line corresponding to the mid line of the face and another to the mid line of the occiput and to join the tops of these two for the mid line of the vault.

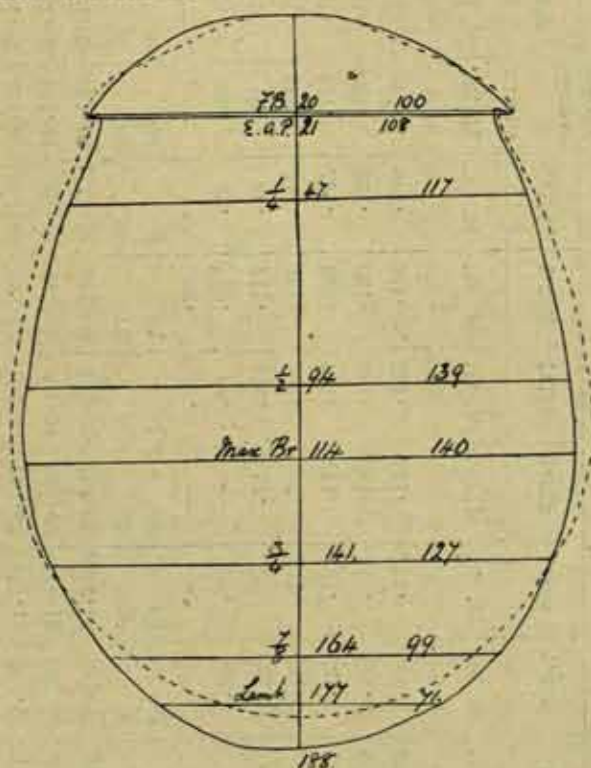


FIG. 11.

Average of 1 ♂ Broadstairs and 1 ♂ Folkestone Jute (continuous line); average of 8 ♂ bronze age (dotted line). ($\frac{1}{2}$ natural size.)

It will be seen that, as in the norma lateralis and facialis, some of the points selected for measurement are arithmetical or proportional while others are natural. For instance, a system which depended entirely on proportional measuring points might miss the external angular process as well as the point of maximum breadth on which so much depends for reproducing a natural contour.

Fig. 10 will make the explanation of the table quite easy. All the measurements upon it refer to the construction of the continuous line, which is the type contour of eight bronze age skulls from Broadstairs and the Royal College of Surgeons. As in the face view, I dare not include Rolleston's drawings, since there is no record of any orientation in them.

TABLE 5.
MEASUREMENTS OF THE NORMA OCCIPITALIS.

| | Broad- stairs. | R.C.S. | | | | | | Bronze average. | R.C.S. | | | Cross- breed average. |
|-----------------------------|-------------------|--------|--------|--------|--------|--------|--------|--------------------|--------|--------|--------|-----------------------------|
| | | 282·1 | 292·1 | 279·1 | 297·1 | 293·1 | 277·1 | | 283·1 | 291·1 | 296·1 | |
| | K. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. | M. Br. |
| Lambda (L.) = 0 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 2 cm. above L. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3 " | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4 " | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 " | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 6 " | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7 " | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Vertex (V.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Parietal eminence (P.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Maximal breadth (M.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Inion (I.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Midway between L. and I. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Asterion (A.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Supratentorial ridge (S.R.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Opisthion (Op.) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

1 Above Inion.

2 Below Inion.

The measurements of breadth are right across the head at right angles to the mid line, so that the tracings, like those of the face, show an artificial symmetry which I regard as the most valuable until craniologists have definitely decided what is to be regarded as the mid line of an asymmetrical skull.

Contrasted with the contour of the eight bronze age skulls, are the two Broadstairs (A. and K.). These, as the dotted line shows, are slightly narrower and longer, while the three cross-bred skulls are traced in the interrupted line and have a contour very like that of the two Jutes shown in Fig. 11.

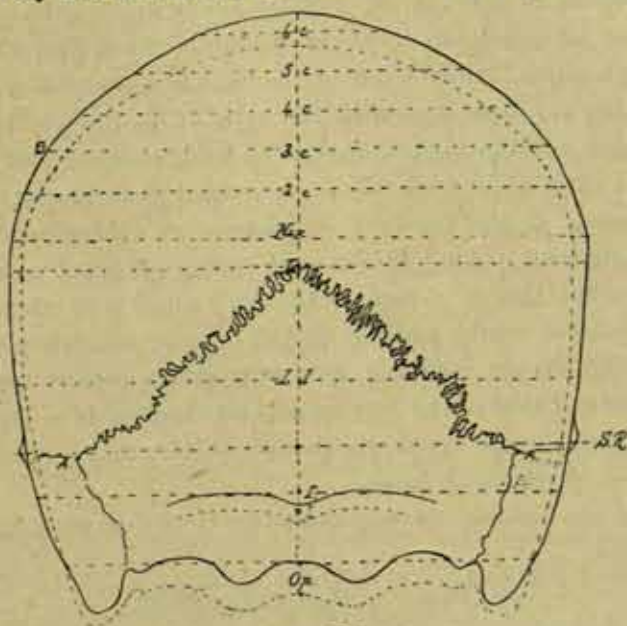


FIG. 12.

Average of 7 ♂ Bronze age (continuous line); average of 3 ♂ cross between Bronze and Neolithic (interrupted line). ($\frac{1}{2}$ natural size.)

It is from this view that the breadth index is obtainable as long as the glabello-maximal length is used. Where the ophryo-maximal length is needed it can be got by direct measurement from the side view of the skull.

The breadth index of the eight bronze age skulls is, glabello-maximal 82, ophryo-maximal 84. That of the two Broadstairs skulls is 79 and 82, while the three cross-breeds have a breadth index of 76 and 78 respectively.

Norma verticalis of Jutish Skulls.

Unfortunately only one male and one female Jutish skull were available for measurement from this point of view, and they both happen to be particularly broad and short for Saxons, as is shown in Table 4. I have, however, constructed a mean contour of the male Broadstairs Jute and a male Jute from Folkestone, which is shown in Fig. 11, and, although it is not founded on nearly enough data, gives some idea of the difference between the bronze age and Jutish skull.

The glabello-maximal breadth index of these two skulls is 74.

Norma occipitalis of Bronze Age Skulls.

Table 5 gives the measurements which I have used in constructing type contours of the norma occipitalis. It should be looked at in conjunction with Fig. 12. As in the former systems, the breadths are taken at points which are partly natural and partly arithmetical or arbitrary. In the upper part where the curvature of the skull is great the measurements have to be numerous, but lower down fewer are needed, for I think that if a system of producing type contours is to be of use, it must not be over-burdened with measurements, and what measurements there are should be taken partly at arbitrary and partly at natural points. Only seven of the bronze age skulls were available for this type, and they are contrasted with the type of the three half-breeds between the bronze age and neolithic people, marked by an interrupted line.

The lambda is the point from which the vertical measurements are taken and is therefore chosen as the point of coincidence in contrasting various types. Whether it is the best point I am not sure, perhaps in many ways the opisthion might be better, but this is a part of the skull which is so often missing that a good deal of material would probably be lost in using it, and, when rare skulls, like those of the bronze age, are being dealt with, this is a very important point.

It will be noticed that in the half-breeds the lambda is a good deal higher than it is in the pure bronze age skulls, though whether this is a racial characteristic or not cannot be settled at present.

I regret that my material has not allowed me to make any satisfactory contours of the Jutish skull.

The Palate of Bronze Age Skulls.

In Table 6 the measurements are given from which I have constructed the type contour of the only four bronze age skulls which were available. If this table is

TABLE 6.—MEASUREMENTS OF PALATE OF FOUR BRONZE AGE ♂ SKULLS.

| | K. | | | 292·1 | | | 282·1 | | | 297·1 | | | Bronze average. | | |
|------------------------------|----|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-----------------|-----|-----|
| | L. | Br. | | L. | Br. | | L. | Br. | | L. | Br. | | L. | Br. | |
| | | aa. | ββ. | | aa. | ββ. | | aa. | ββ. | | aa. | ββ. | | aa. | ββ. |
| Length without spine (A.B.). | 47 | — | — | 49 | — | — | 45 | — | — | 42 | — | — | 46 | — | — |
| Alveolar breadth at B | — | 35 | — | — | 35 | — | — | 40 | — | — | 41 | — | — | 38 | — |
| Length with spine (A.Sp.). | 51 | — | — | 55 | — | — | 50 | — | — | 46 | — | — | 51 | — | — |
| Canine... .. | 5 | 26 | 46 | 8 | 23 | 37 | 3 | 25 | 45 | 4 | 23 | 40 | 5 | 24 | 42 |
| Second premolar ... | 15 | 37 | 55 | 18 | 32 | 52 | 12 | 37 | 55 | 15 | 36 | 54 | 15 | 36 | 54 |
| Second molar... .. | 34 | 44 | 70 | 37 | 41 | 65 | 38 | 42 | 67 | 32 | 42 | 67 | 35 | 42 | 67 |

compared with Fig. 13, there will, I think, be little difficulty in understanding how the measurements are made, and I have tested them carefully by reconstructing outlines of single palates, the originals of which had been traced with the dioptograph.

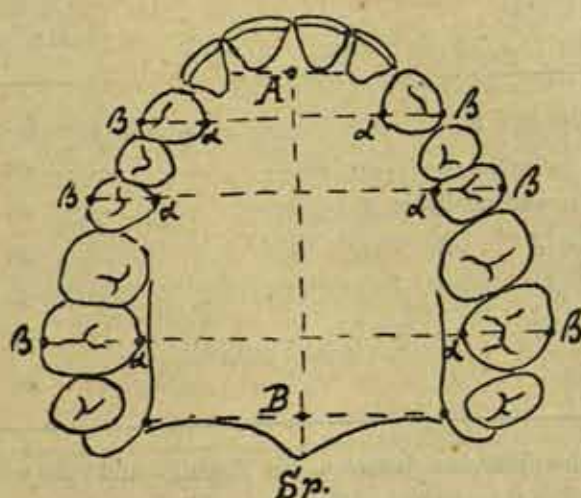


FIG. 13.

Type of 4 bronze age ♂ palates. (Natural size.)

I believe that these measurements are all that are necessary to give a faithful type contour.

Little real use can be made of this contour until we have other types with which to compare it, but it is enough to make us think that the bronze age people had large, well-formed palates with large teeth.

The details of the teeth, except the breadth of the canines, second premolars and second molars, are of course artificial, though, when the position of these teeth is fixed, there is not much room for a mistake in the others; the size of the last molar, however, was taken from one specimen only, for in only one specimen was it present.

Of the condition of these teeth I should say that, though worn down, they are not so greatly worn as we find them in the Saxons' or Middle English mouths, but this is only an opinion formed from a small knowledge of bronze age teeth. If the generalization is true it may point to the probability of these people living less on hand-ground corn than did the English, but ingenious theories of this sort are always most easily made where the facts are fewest.

The question of a palate index I propose to leave until I have more type contours of palates. When the contours are before us it will be easy to see what index gives most information about them.

Skull Indices.

a. *Auriculo-bregmatic Height Index*, obtained by dividing the height from the middle of the external auditory meatus to the bregma by the ophryo-maximal or

glabello-maximal length. The higher the figure is the greater the height and the less the length.

| | Glabello- Maximal. | Ophryo- Maximal. |
|--|-----------------------|---------------------|
| 2 Broadstairs bronze age ♂ | 73 | 75 |
| 16 Bronze age ♂ | 68 | 70 |
| 3 Cross-bred bronze and neolithic ♂ | 65 | 67 |
| 2 Broadstairs Jutes ♂ | 66 | 67 |
| 13 Saxons (R.C.S.) ♂ | 65 | 66 |
| 2 Broadstairs Jutes ♀ | 65 | 65 |
| 7 Saxons (R.C.S.) ♀ | 65 | 66 |

In the table the difference between the glabello- and ophryo-maximal indices is useful in estimating the amount of the supraorbital development.

β. Orbital Index, obtained by dividing the greatest orbital height at right angles to the long axis of the orbital opening by the greatest actual (not projected) orbital width taken in front of the lacrimal groove in the long axis of the orbital opening.

In 7 Bronze age ♂ the orbital index is 74
 „ 8 Anglo-Saxon ♂ „ „ „ 80
 „ 5 Jutish ♀ „ „ „ 85

γ. The Nasal Index is gained by dividing the actual (not projected) length of the nose from the nasion to the root of the anterior nasal spine on a level with the lowest point of the nasal aperture into the greatest nasal width.

In 7 Bronze age ♂ the nasal index is 46
 „ 8 Anglo-Saxon ♂ „ „ „ 48
 „ 5 Jutish ♀ „ „ „ 47

δ. The Breadth, or Cranial Index, is obtained by dividing the maximal breadth of the skull by the glabello-maximal or ophryo-maximal length. In most of our older English records it is the ophryo-maximal length which is used, and I still think that there is much to be said for this, because it gives the length of the brain-containing part of the skull, and is independent of the air-containing superciliary eminence. However, for convenience of comparison, I give both.

The *Index of Prognathism* is taken in many ways. Flower divided the basi-nasal into the basi-alveolar length, but in many of my series of skulls the basion was damaged, and I have found, in dealing with prehistoric and early English skulls, that the external auditory meatus is a much more likely spot to be undamaged

than the basion; besides which the auriculo-nasal and auriculo-alveolar lengths and averages are already to hand in the construction of the norma lateralis type

| | Glabello-Maximal. | Ophryo-Maximal. |
|---|-------------------|-----------------|
| The breadth index of eight bronze age ♂ is ... | 82 | 84 |
| " " two " " (Broadstairs) ... | 79 | 82 |
| " " one " " (Sunderland, see Addendum) | — | 83 |
| " " three cross-breeds between bronze and neolithic | 76 | 78 |
| " " one ♂ Broadstairs and one ♂ Folkestone Jute... .. | 74 | — |

contours, and again measurements from the meatus are possible in the living head, so I have used them in working out this index and divide the auriculo-nasal by the auriculo-alveolar lengths.

| | |
|--|----|
| The prognathic index of 16 bronze age ♂ is ... | 97 |
| " " " " 2 cross breeds between bronze and neolithic is ... | 97 |
| " " " " 4 ♀ Jutes ... | 94 |

The bronze age people are evidently very orthognathous while the Jutes seem less so.

CRANIAL CAPACITY.

Few of the skulls were perfect enough to take the actual capacity with shot, but I have estimated the capacity by using two of Dr. Lee's formulæ (*Phil. Trans.*, A, vol. 196, 1901); taking the average glabello-maximal length of 16 male bronze age skulls at 180, the auricular height (from the middle of the meatus to the bregma) at 124, and the maximal breadth of eight skulls at 148. According to formula No. 8 their capacity would be 1496 c.c., but according to formula No. 9 it would be 1512 c.c.

It is probable, therefore, that they average about 1500 c.c., which is less than that of average modern Europeans, whose skull capacity is from 1550 to 1600.

FEMUR.

Bronze Age.

| | Oblique Length. | | Vertical Length. | | Diameter of Head. | | Least diameter of Shaft. | | Platymeria. | | | | | | Degree of torsion. | |
|------------------------|-----------------|-------|------------------|-----|-------------------|----|--------------------------|----|------------------|----|-------------|----|--------|----|--------------------|----|
| | R. | L. | R. | L. | R. | L. | R. | L. | Antero-posterior | | Transverse. | | Index. | | | |
| A. ♂ ... | — | 460 | — | 468 | 52 | 52 | 27 | 28 | 29 | 30 | 35 | 34 | 83 | 88 | — | 42 |
| B. ♂ ... | 435 1 | 438 7 | — | — | — | — | 28 | 28 | 25 | 25 | 32 | 38 | 78 | 66 | — | — |
| K. ♂ ... | 425 | 425 | 430 | 430 | 44 | 43 | 27 | 28 | 25 | 26 | 35 | 37 | 71 | 70 | 17 | 30 |
| Average of the 3 males | — | 441 | — | — | — | — | 27 | 28 | 26 | 27 | 34 | 36 | 77 | 75 | — | — |
| M. ♀ ... | — | 400 1 | — | — | — | — | — | 24 | 20 | 23 | 31 | 31 | 65 | 74 | — | — |

According to Pearson's tables (*Phil. Trans.*, A, vol. 192):

A. should be 170 cm. tall, i.e., 5 feet 7 inches.

B. " " 164 " " " 5 " 4½ "

K. " " 162 " " " 5 " 3¾ "

M. " " 158 " " " 5 " 2¼ "

It was possible, however, to articulate the whole of the vertebræ of A. with the exception of the atlas. The intervertebral discs, of course, had to be replaced by slices of cork, but my contention is that, as long as all the articular processes are in accurate apposition and the discs of such a size as to reproduce the normal curvature of the spinal column, the length of the column must be approximately that of the individual during life because, always supposing that the articular processes are made to fit exactly, the discs if cut too large would over extend the column, while if they were cut too small it would assume a flexed posture. An atlas of such a size as to fit the axis and skull having been supplied, all the other parts necessary to measure the height of the skeleton were present and when these were fitted together it was found that the total height was over 5 feet 9 inches. Nothing can fairly be deduced from this isolated specimen, but it is worth carefully recording because it may turn out that in this bronze race the femora are unusually short, or the spine unusually long, or it may be that this is a case of individual variation.¹

¹ Since writing the above Dr. Coke Squance's record of the Sunderland skeletons has come to hand (see Addendum). In his male skeleton the tape gave a height of 5 feet to 5 feet 2 inches, but his femur, tibia and humerus, according to Pearson's tables, would have made him 5 feet 4½ inches. It does not, therefore, seem that an abnormal length of the axial skeleton is characteristic of this race.

Another point which is worth bearing in mind when more material comes to hand is that the difference between the oblique and vertical lengths of the femur in the bronze race seems greater than usual, since in A. there was a difference of 8 mm. between the two measurements and in K. of 5 mm. Pearson suggests that 3.2 mm. should be added to the oblique length of an average femur in order to gain the vertical length.

Unfortunately the diameter of the head could only be determined in A. and K.: in the latter it is only 44 mm., though 45 is the usual border line between male and female femurs. In B., judging from the probable diameter of the broken acetabulum, the head must have been of great size.

In Greenwell and Rolleston's *British Barrows* (London, 1877), no notice is taken of the size of the head of the femur, but in the case of two male bodies the length of the bone is recorded, and this, in the absence of any definite statement, I presume is the oblique length. In the skeleton from Cowlam (p. 587), the femur was 18.5 inches which, according to Pearson, would give a height of 5 feet 7 inches and in that from Ilderton (p. 583) it was 19.1 inches, giving a height of 5 feet 8 inches.

These five femur lengths give an average of 5 feet 6 inches for bronze age males, but luckily Dr. Beddoe measured 27 male femurs from round barrows (*Journ. Roy. Anthropol. Inst.*, vol. xvii, 1887, p. 209), and found that their mean length was 477 mm., which gives an average stature of rather over 5 feet 7 inches according to Pearson's table, though Dr. Beddoe thought that they were a good deal taller. All we can say at present is that, if the femur length has the same ratio to the body height in bronze age people as it has in modern Europeans, the bronze age men were about 5 feet 7 inches tall. The only evidence I know on this point is the Broadstairs skeleton A., now in the Royal College of Surgeons Museum, and in that the femur length, as interpreted by Pearson, under estimates the actual height by two inches, while in the Sunderland specimen (*see* Addendum) the femur length gives a greater height by 2½ inches than Dr. Coke Squance obtained with his tape.

With regard to the females, I find that Rolleston records (*loc. cit.*, p. 575) a skeleton from Flixton Wold, the length of whose femur was 16.8 inches, which would give a height of 5 feet 3¼ inches, that is an inch and a half taller than M. So that our scanty material points to a height of some 5 feet 3 inches or 5 feet 4 inches for the bronze age females.¹

The least transverse diameter of the shaft of the femur is, I think, a measurement worth taking, as it gives a clue to the strength and physique of the individual. In A., B. and K. it is 28 mm., and is quite equal to the average of modern English male femora (*see* Author's paper on "Saxon Bones from Folkestone," *Journ. Roy. Anthropol. Inst.*, vol. xli, p. 125). In the female M. the diameter is only 24 mm., which means a very slight bone. In making these measurements, every care has been taken to allow for "weathering," and I feel sure that the range of possible error is well within 1 mm.

¹ Dr. Coke Squance measured the Sunderland female skeleton and made it between 4 feet 8 inches and 5 feet. (*See* Addendum.)

The platymeric index is probably a valuable one, because it shows the divergence from a femur which is circular in section just below the lesser trochanter. When the antero-posterior and transverse diameters are equal, the index would be 100, so that the smaller it is the greater the breadth, or the less the antero-posterior diameter at this point.

In eleven modern English femurs, I found the index between 80 and 90, and in 50 mediæval femurs it averaged 82, so that A. is not platymeric at all, but the other three are distinctly so.

The degree of torsion of the left femora of A. and K. is remarkable and gives the bones a most curious appearance.

I paid great attention to fixing this torsion accurately, and measured it in the following way. A steel rod was driven through the long axis of the head and neck and left projecting from the head for some 6 inches. Another was driven through the transverse axis of the lower end of the femur, and left projecting from the inner condyle. The femur was then laid on its outer side on a bench in a dark room with a screen of white paper beyond the head, the rods pointing upwards. An electric light was then placed at such a distance from the lower end of the femur that the shadows of the two rods were thrown upon the screen.

After this the femur was manipulated until the shadows of the two rods at their points of emergence from the femur coincided when they were traced on the screen in pencil. It then only remained to measure the angle between them with a goniometer.

Jutish Femora.

| | Oblique Length. | | Vertical Length. | | Diameter of Head. | | Least Diameter of Shaft. | | Platymeria. | | | | | | Degree of Torsion. | |
|------------------|-----------------|-----|------------------|-----|-------------------|----|--------------------------|----|-------------|----|---------|----|--------|----|--------------------|----|
| | | | | | | | | | Anto.-post. | | Transv. | | Index. | | | |
| | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. |
| E. (♂) ... | 460 | — | — | — | 49 | 49 | 25 | 26 | 23 | 25 | 31 | 35 | 74 | 71 | 18 | — |
| L. (♂) ... | — | 447 | — | 455 | 48 | 48 | 29 | 29 | 29 | 29 | 35 | 35 | 83 | 83 | — | 14 |
| O. (♂) ... | — | 460 | — | 463 | 47 | 47 | 30 | 29 | 27 | 27 | 34 | 36 | 80 | 75 | — | 13 |
| Male average ... | 460 | 453 | — | 459 | 48 | 48 | 28 | 28 | 26 | 27 | 33 | 35 | 79 | 76 | 18 | 14 |
| L. (♀) ... | 450 | 454 | 459 | 461 | 47 | 46 | 25 | 25 | 25 | 25 | 28 | 31 | 90 | 81 | 19 | 11 |
| Q. (♀) ... | 444 | 442 | 448 | 445 | 43 | 42 | 25 | 26 | 25 | 27 | 31 | 28 | 81 | 96 | 26 | 5 |
| S. (♀) ... | 450 | 447 | 454 | 452 | 43 | 42 | 25 | 26 | 22 | 21 | 33 | 32 | 67 | 66 | 33 | 6 |
| Female average | 448 | 448 | 454 | 453 | 44 | 43 | 25 | 26 | 24 | 24 | 31 | 30 | 79 | 81 | 26 | 7 |

The average height of the three male Jutes, according to Pearson's tables, would be 168 cm., or 5 feet 6½ inches. This is the same average as the six male Jutes from Folkestone whose femora I measured (*loc. cit.*, p. 124).

The three females, on the same reckoning, should be 166 cm. or approximately 5 feet 5 inches. This also practically corresponds with the average of the six Folkestone Jutish women which was 5 feet 4½ inches. It seems probable, therefore, that we are approaching a fair estimate of the height of the East Kent Jutes in pre-Christian times, and in both the Broadstairs and Folkestone settlements it is noticeable that the height and physique of the females is considerably nearer that of the males than I believe it is in modern Englishwomen.

The diameters of the heads and shafts of the femora point to the slighter build of these bones than that of modern or mediæval Englishmen.

I must admit that the bones of the skeleton L. make me rather doubtful of its sex, but since two chatelaines or key-rings were found with it, we may, I think, safely look upon it as that of a woman; it was also, by the bye, the one with which the sceattas were found.

The platymeric indices average nearly the same as those of the Folkestone Jutes, but E. and S. show that platymeria is sometimes quite pronounced. It should be noticed, however, that while three of the four bronze age skeletons had distinctly platymeric femora, in only two of the six Jutes was platymeria present. In considering this question of platymeria and its causation, I have made some careful dissections of the muscles and their attachments in the bodies at present in my dissecting rooms. Unfortunately no subject showed any sign of platymeria, and until one or two platymeric thighs are carefully dissected and recorded, the vexed question as to whether the change of shape in the femur is due to the gluteus maximus or the vasti cannot be definitely settled. In considering it, however, the following points should be borne in mind: 1. That there is a marked ridge or flange on the outer side of the bone which is altogether in front of and quite distinct from the gluteal ridge. 2. That there is a similar ridge on the inner side of the bone. 3. That the top of the femur, including the great trochanter, is often drawn forward most distinctly in platymeric bones.

There can, I think, be no suggestion that the gluteus maximus produces a flange on the inner side of the femur or pulls the upper part of that bone forward. These effects are produced in the region of the attachment of the vastus internus and crureus. If this is granted it seems to me much more reasonable to postulate an unusually strong attachment for the vastus externus, also a member of the quadriceps extensor group, rather than to suggest that a part of the gluteus maximus creeps forwards in these cases, on to the area normally occupied by the vastus externus.

Those authors who believe in the gluteus maximus as causing the outer flange must surely allow that the other changes in a platymeric femur, the inner flange and forward bend, are due to parts of the quadriceps extensor. Does it not seem more likely that the whole change is due to special development of the quadriceps

extensor, particularly as dissection shows that the vastus externus is attached to the site from which the outer flange juts out?

It will usually be found that platymeria is better marked on one side than the other, though I have not enough material yet to say on which side it is most common.

Torsion of the femur, like platymeria, is usually greater on one side than the other, and I notice that when one femur is twisted to a great extent, as it is in skeletons K., Q., and S., the other one is twisted very slightly. It is particularly interesting to notice how in every case the Jutes have the right femur most twisted while in the two bronze age records it is the left, but, of course, I dare not suggest that this will always be found.

THE TIBIA.

| | Length without spine. | | Head breadth. | | Platycnemidia. | | | | | | Squatting facet. | | Angle of torsion. | |
|--|-----------------------|----|---------------|----|----------------|----|-------------|----|--------|----|------------------|----|-------------------|----|
| | | | | | Anto.-postr. | | Transverse. | | Index. | | | | | |
| | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. |

MALE BRONZE AGE BONES.

| | | | | | | | | | | | | | | | | |
|------------|-----|-----|------|-----|-----|-----|-----|----|-----|----|----|----|----|----|----|----|
| A. | ... | ... | — | 384 | — | 79 | — | 40 | — | 28 | — | 70 | — | P. | — | 22 |
| B. | ... | ... | 360 | 363 | 75? | 73 | 41 | 38 | 21 | 19 | 51 | 50 | P. | ? | 19 | 13 |
| K. | ... | ... | 360? | 362 | 72? | — | 36 | 35 | 24 | 24 | 67 | 69 | P. | P. | — | 37 |
| Average... | ... | ... | — | 370 | 74? | 76? | 39? | 38 | 23? | 24 | — | 63 | P. | P. | — | 26 |

MALE JUTISH BONES.

| | | | | | | | | | | | | | | | | |
|------------|-----|-----|------|---|---|---|----|----|----|----|----|----|---|----|---|---|
| E. | ... | ... | 401? | — | — | — | 34 | — | 25 | — | 74 | — | ? | P. | — | — |
| I. | ... | ... | — | — | — | — | 32 | 31 | 25 | 25 | 78 | 81 | — | — | — | — |
| O. | ... | ... | 376? | — | — | — | 34 | — | 22 | — | 65 | — | — | — | — | — |
| Average... | ... | ... | 388? | — | — | — | 33 | — | 24 | — | 72 | — | — | — | — | — |

FEMALE JUTISH BONES.

| | | | | | | | | | | | | | | | | |
|------------|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| L. | ... | ... | 376 | 375 | 66 | 66 | 31 | 32 | 25 | 24 | 81 | 75 | P. | P. | 22 | 17 |
| Q. | ... | ... | 367 | 370 | — | 68? | 33 | 34 | 24 | 24 | 73 | 71 | P. | P. | 44 | 36 |
| S. | ... | ... | 385 | 383 | 68 | 69 | 32 | 23 | 21 | 21 | 66 | 64 | ? | P. | 27 | — |
| Average... | ... | ... | 376 | 376 | 67? | 68 | 32 | 33 | 23 | 23 | 73 | 70 | P. | P. | 31 | — |

Taking the bronze age tibiae first, the average length of the left bones gives a probable stature, according to Pearson's tables, of 166 cm. or nearly 5 feet 5½ inches. Individually—

| | | | | |
|----|-----------------|---------|-----------|------------|
| A. | should be about | 169 cm. | or 5 feet | 6½ inches. |
| B. | " | " | 165 " | " 5 " 5 " |
| K. | " | " | 165 " | " 5 " 5 " |

When these are compared with the statures as estimated from the femur lengths it will be noticed that there is a discrepancy of 3 cm. in the height of K. as estimated from the femur and from the tibia,¹ while the tibia length in A., contrary to the usual experience, gives a smaller stature than does the femur length, and in either case the estimated stature is some 2 inches short of the height of the articulated skeleton of A.

The breadth of the head of the tibia shows that the bones were as broad here as in modern English tibiae, the average of 18 of which was 75 mm. (see Folkestone Saxon paper, *Journ. Roy. Anthropol. Inst.*, vol. xli, p. 126).

Platycnemia is well marked in B. and K., but not in A. (the average platycnemic index of 18 modern English tibiae was 71 as against an average of 63 for the three bronze age specimens).

A squatting facet for articulation with the astragalus was present in all three of these bronze age people on the outer part of the anterior surface of the lower end of the tibia.

The average degree of torsion of the tibia (26°) is distinctly high; it was measured with rods and shadows in the same way as that in which the torsion of the femur was estimated. Mikulicz gives 5° to 20° as the range while the 18 modern English tibiae which I measured gave 18°.

It is very unfortunate that no satisfactory comparison between the torsion of the femur and tibia is possible, owing to the broken condition of so many of the bones; still here is the comparison for what it is worth:—

| Torsion of Femur. | | | | | Torsion of Tibia. | | | | |
|-------------------|-----|----|-----|----|-------------------|-----|-----|-----|----|
| | | R. | L. | | | R. | L. | | |
| A. | ... | — | ... | 42 | ... | ... | — | ... | 22 |
| B. | ... | — | ... | — | ... | 19 | ... | ... | 13 |
| K. | ... | 17 | ... | 30 | ... | ... | — | ... | 37 |

Turning now to the Jutish tibiae we find an average length of 388 mm. for the males and of 376 mm. for the females which, according to Pearson, gives a height of 169 cm. and 167.5 cm. respectively, so that, estimating by the tibiae, the stature would be about 1 cm. more than in estimating by the femur. To those who are used to thinking in inches this is not a very serious discrepancy.

¹ The want of proportion in the bones of K. has made me doubt whether, in spite of my having removed them from the ground myself and having carefully marked each bone at the time, parts of two bodies might not have been mixed together. A careful re-examination of the bones, however, convinces me that they fit perfectly and that this is merely an instance of an ill-proportioned individual such as is met with from time to time in any race.

The combined length of the femur and tibia in those cases in which both the extremities are intact is as follows:—

| | | R. | | L. |
|----|-----|-----|-----|-----|
| B. | ... | 795 | ... | 801 |
| K. | ... | 785 | ... | 787 |
| L. | ... | 826 | ... | 829 |
| Q. | ... | 811 | ... | 812 |
| S. | ... | 835 | ... | 830 |

It is interesting to notice that in four of the five individuals the left limb is longer than the right.

The head breadths of the Jutish tibiae are considerably below those of the bronze age people as well as of modern English. It is this small size of the bony ends which helps to give the slim, graceful appearance so characteristic of Jutish and, for all I know to the contrary, of Saxon and Anglian long bones.

The platycnemic indices show that these Jutish bones were decidedly less platycnemic than those of the bronze folk, though they were slightly more so than were the Folkestone Jutes (*op. cit.*).

Squatting facets were present in four of the six individuals, in the other two the lower ends of the tibiae were too damaged for me to notice whether the facet was present or not.

I regret that in my former paper on Folkestone Jutes I failed to look for this peculiarity, but it is evident that it is a very common thing among pre-Christian Jutes and probably points to a time in which chairs and stools were rare.

The accompanying table gives a comparison of the degree of torsion in the femur and tibiae of Jutes:—

| Torsion of Femur. | | | | | Torsion of Tibia. | | |
|-------------------|-----|----|----|-----|-------------------|-----|----|
| | | R. | L. | | R. | L. | |
| E. | ... | 18 | — | ... | — | ... | — |
| I. | ... | — | 14 | ... | — | ... | — |
| L. | ... | 19 | 11 | ... | 22 | ... | 17 |
| O. | ... | — | 13 | ... | — | ... | — |
| Q. | ... | 26 | 5 | ... | 46 | ... | 36 |
| S. | ... | 33 | 6 | ... | 27 | ... | — |

This table, as far as it goes, makes one suspect that torsion, both in the femur and tibia, is greater on the right than on the left side. It also, with the single exception of the left side of Q., suggests that the more twisted femora are joined to the more twisted tibiae.

When it is remembered that the twist in the two bones (femur and tibia) is in opposite directions it points to a compensatory arrangement by which the foot is brought back into its normal direction.

THE ASTRAGALUS.

| | | Length from front of head to back of tibial facet ($\alpha\beta$). | | Breadth at middle of tibial facet ($\gamma\delta$). | | Angle formed by neck and body (ϵ). | | Astragalar index. | |
|---------|-----------------------|--|----|---|------|---|------|-------------------|------|
| | | R. | L. | R. | L. | R. | L. | R. | L. |
| Bronze. | A. (δ) ... | 57 mm. | 57 | 31 | 31 | 150° | 157° | 13 | 14 |
| | B. (δ) ... | 54 | 54 | 33 | 32 1 | 153° | 159° | 27 | 25 |
| | K. (δ) ... | 47 | 49 | 27 | 25 | 157° | 156° | 21 | 21 |
| | Average of bronze age | 53 | 53 | 30 | 29 | 153° | 157° | 20 | 20 |
| Jutes. | O. (δ) ... | — | 51 | — | 34 | — | 160° | — | 20 |
| | Q. (φ) ... | — | 49 | — | 28 | — | 156° | — | 11 |
| | S. (φ) ... | — | 50 | — | 30 | — | 140° | — | 21 1 |

I have not enough knowledge of astragali in which the sex is certain to venture to deduce anything from these measurements and merely record them as a contribution and a suggestion of measurements which may be found useful hereafter. Probably there are sexual and racial characteristics in the astragalus but careful and prolonged study will be necessary to establish them.

The astragalar index is one which has always given me great difficulty in determining practically, although theoretically it is simple enough. I seldom make it the same if I measure the same bone two or three times and I therefore prefer to record the inward thrust of the head by drawing the contour of the bone and measuring the angle ϵ which the central axis of the neck makes with that of the body.

THE CALCANEUM.

The following are the total lengths of the few calcanea which were perfect enough to measure:—

A. (r.) 86, (l.) 84.

B. (l.) 86.

K. (r.) 79, (l.) 76.

Q. (l.) 77.

THE CLAVICLE.

The clavicle is an important bone to measure carefully whenever possible, because its length gives a good idea of the shoulder breadth, while its curvature indicates the degree of muscular development in the shoulder region. Unfortunately the clavicle is not a bone which lasts very well, and I could only find specimens from six bodies which were fit for measuring.

The accompany figure (14) shows contour reproductions of these six clavicles. In order to estimate the amount of curvature present I have joined the two most convex points on the back of the clavicle ($a\beta$) and then taken the point which is most convex forward (γ). From this point a perpendicular ($\gamma\delta$) is dropped on $a\beta$.

In considering the effect of the forward pull of the pectoralis major the distance between the fixed ends of the bow should no doubt be taken into account. These are obviously the sterno-clavicular extremity and the conoid

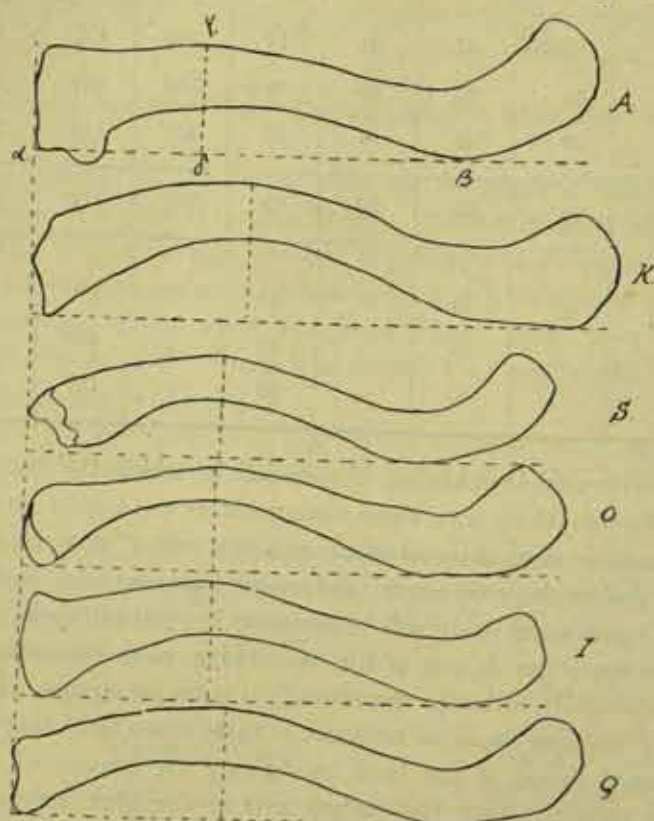


FIG. 14.

($\frac{1}{2}$ natural size.)

tubercle at the junction of the middle and outer thirds of the bone. If the contour diagrams are looked at, it will be seen that the point of maximum forward convexity lies about midway between these two points.

It seems, however, an unnecessary thing to add the measurement $a\beta$ to our list, since if the total length of the bone is divided into $\gamma\delta$ an index will be established which will give a very fair idea of the muscular development of the individual as shown in the work of the pectoralis major.

With regard to the ratio of the clavicular length to the shoulder breadth, I find, after measuring several bodies in the post-mortem room, that the clavicle averages $\frac{4}{5}$ or two-fifths of the shoulder width, though, of course, much fat or great deltoid development affects the ratio to a certain extent.

| | Clavicular length. | | Length of $\gamma\delta$ (Fig. 14). | | Index of curvature. | | Probable shoulder breadth. | | |
|-------------------|--------------------|-----|-------------------------------------|----|---------------------|------|---|---------------------|---|
| | R. | L. | R. | L. | R. | L. | | | |
| Bronze age males— | | | | | | | | | |
| A. | 146 | 148 | — | 28 | — | 19 | 365 mm. = $14\frac{1}{2}$ ins. approximately. | | |
| K. | — | 154 | — | 35 | — | 22.7 | 385 | = $15\frac{1}{2}$ " | " |
| Jutish males— | | | | | | | | | |
| L. | 138 | — | 30 | — | 21.7 | — | 345 | = $13\frac{1}{2}$ " | " |
| O. | 142 | — | 27 | — | 19 | — | 355 | = 14 " | " |
| Jutish females— | | | | | | | | | |
| Q. | — | 148 | — | 28 | — | 19 | 370 | = $14\frac{1}{2}$ " | " |
| S. | 142? | — | 26 | — | 18.3 | — | 355 | = 14 " | " |

THE SCAPULA.

All the scapulae were so fragmentary that no satisfactory measurements could be taken.

THE HUMERUS.

The following are the measurements which were possible in the material at my disposal:

Bronze Age Humeri.

| | Length. | | Vertical axis of head. | | Transverse axis of head. | | Least diameter of shaft. | | Trochlear breadth behind. | | Inter-condylar breadth. | |
|----------------------|---------|-----|------------------------|----|--------------------------|-----|--------------------------|----|---------------------------|----|-------------------------|----|
| | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. |
| A. (δ) ... | 331 | 330 | 49 | 49 | 45 | 45 | 21 | 21 | 23 | 23 | 63 | 63 |
| B. (δ) ... | — | — | — | — | — | — | 20 | — | — | — | — | — |
| K. (δ) ... | — | 308 | — | 40 | — | 39? | — | 20 | — | 23 | — | 63 |
| M. (φ) ... | — | — | — | — | — | — | 17 | 17 | — | — | — | — |
| δ average ... | — | 319 | — | 45 | — | 45 | 21 | 21 | 23 | 23 | 63 | 63 |
| φ " ... | — | — | — | — | — | — | 17 | 17 | — | — | — | — |

Jutish Humeri.

| | Length. | | Vertical axis of head. | | Transverse axis of head. | | Least diameter of shaft. | | Trochlear breadth behind. | | Inter-condylar breadth. | |
|-----------|---------|-------|------------------------|----|--------------------------|----|--------------------------|----|---------------------------|----|-------------------------|----|
| | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. | R. | L. |
| E. | — | 335 † | — | — | — | — | 19 | — | — | — | — | — |
| Q. | — | 310 † | — | 42 | — | 37 | — | 20 | — | — | — | — |
| S. | 323 | — | 44 † | — | 41 † | — | 17 | — | 21 | — | 58 | — |

According to Pearson's tables the height of A. should be 167 cm.

| | | | | | |
|---|---|---|----|---|-------|
| " | " | " | K. | " | 160 " |
| " | " | " | E. | " | 169 " |
| " | " | " | Q. | " | 161 " |
| " | " | " | S. | " | 164 " |

The least diameter of the shaft of the humerus for the male bronze age humeri A, B. and K., viz. 20 and 21 mm., shows that these were sturdy bones, still the diameter is less than the average of 11 ♂ modern English humeri from my dissecting room, which gave an average of 22 mm. The bones of A. closely resemble a lecture specimen of a modern humerus which was specially selected for its strong development but the pectoral ridge is distinctly greater in the bronze age bone. K. has also very strongly marked muscular impressions and all the evidence at my disposal points to these people as having had a singularly good muscular development of their upper extremities.

THE ULNA.

Only four ulnæ were available for measurement. Their lengths were as follows:—

A. (left) 275 mm. B. (right) 273 mm. K. (left) 273 (?) mm. E. left 300 mm.

No statistics, as far as I know, are available for estimating the height of the individual from the length of the ulna.

THE RADIUS.

Only three radii were measurable and of these the lengths of A. and K. are only approximate. They are A. (left) 255 (?) mm. B. (right) 250 mm. K (left) estimated at 255 (?) mm. by myself and at 257 mm. by Professor Keith.

These, according to Pearson's tables, give a stature of about 169 cm. for A. and of 168 cm. for B. The discrepancy between these and the heights obtained from the tibia and femur is no doubt accounted for by these people having a proportionally longer forearm than those on whom Pearson founded his statistics.

THE PROPORTIONS OF THE LIMBS.

The Radio-humeral Index.

| Skeleton. | | | Humeral length. | Radial length. | Index. |
|-----------|-----|-----|-----------------|----------------|--------|
| A. | ... | ... | 330 | 255 ? | 77 |
| B. | ... | ... | — | 252 | — |
| K. | ... | ... | 308 | 256 ? | 83 |

The lower ends of the radii of both A. and K. are damaged, but Professor Keith and I measured them independently and arrived at practically the same computation.

The fact that B. had a perfect radius measuring 252 mm. makes it probable that the others were not over-estimated.

In any case there is enough evidence to make us suspect that the bronze age race had a very much longer forearm in proportion to the arm than have modern Englishmen.

I found no Jutish radii fit to measure.

Tibio-femoral Index.

Bronze Age.

| Skeleton. | | | Femoral length. | Tibial length. | Index. |
|-----------|-----|-----|-----------------|----------------|--------|
| A. | ... | ... | 460 | 384 | 83 |
| B. | ... | ... | 440 ? | 363 | 83 |
| K. | ... | ... | 425 | 362 | 85 |

This, as far as it goes, looks as if the bronze age people were on the border line between brachy- and dolicho-cnemia which Turner has fixed arbitrarily at 83.

The following are the Jutish records:—

| Skeleton. | Femoral length. | Tibial length. | Index. |
|------------|-----------------|----------------|--------|
| E. (♂) ... | 460 | 401 ? | 87 ? |
| O. (♂) ... | 460 | 376 ? | 82 |
| L. (♀) ... | 454 | 375 | 82 |
| Q. (♀) ... | 442 | 370 | 84 |
| S. (♀) ... | 447 | 383 | 86 |

This gives an average index of 84 and, as the Jutish bones at Folkestone had an index of 83, it is probable that 83 or 84 is the average for the Jutish tibio-femoral index.

Humero-femoral Index.

| Skeleton. | Femoral length. | Humeral length. | Index. |
|-----------|-----------------|-----------------|--------|
| A. | 460 | 330 | 72 |
| K. | 425 | 308 | 72 |
| E. | 460 | 335 ? | 73 ? |
| Q. | 442 | 310 ? | 70 ? |
| S. | 450 | 323 | 72 |

It would, therefore, seem that the proportion of the humerus to the femur is pretty constant in both these races and averages about 72. This likelihood is strengthened by the fact that the Folkestone Jutes also had an index of 72.

Inter-membral Index.

I could only get this index in two skeletons owing to the scarcity of radii: luckily they are both bronze age.

| Skeleton. | (Femur + Tibia) ÷ (Humerus + Radius) = Index | | | | | |
|-----------|--|-----|-----|-------|----|--|
| A. ... | 460 | 384 | 330 | 255 ? | 69 | |
| K. ... | 425 | 362 | 308 | 256 ? | 69 | |

Turner (*Challenger Reports*, vol. xlviii) regards 69 as the normal index for Europeans.

THE PELVIS.

As is usual in ancient skeletons, the pelvis was very fragmentary and only a few observations were possible.

Unfortunately, the pelvis, which is so valuable for sexing purposes, is always the most damaged, and I only found it perfect enough to use in distinguishing the sex of two skeletons, Q. where it was distinctly female, and K. in which it was male.

The diameter of the acetabulum is useful in distinguishing the sex when the head of the femur is not available, since the two seem to vary pretty constantly.

| | Acetabular width. | | Head of femur. | | Difference. | |
|---------|-------------------|-----|----------------|------|-------------|----|
| | R. | L. | R. | L. | R. | L. |
| A. | 5.8 | 5.6 | 5.2 | 5.2 | .6 | .4 |
| K. | 5.0 | 5.0 | 4.4 | 4.3 | .6 | .7 |
| L. | 5.3 | 5.3 | 4.7 | 4.6 | .6 | .7 |
| O. | — | 5.3 | — | 4.7 | — | .6 |
| Q. | — | 4.7 | — | 4.2 | — | .5 |
| S. | 5.0 | 5.0 | 4.3 | 4.2? | .7 | .8 |
| Average | — | — | — | — | .6 | .6 |

From the above table it seems that if .6 cm. is subtracted from the acetabular width it will give the diameter of the head of the femur nearly enough for all practical purposes.

The great sacro-sciatic notch is also of some importance in distinguishing sex, for when its vertical limb is distinctly longer than the horizontal, the bone is probably male, but when the two limbs are of more nearly equal size, it is more likely to be female. A., E. and K. have male notches, L. and S. female.

The so-called "pre-auricular" groove, which lies below and behind the auricular facet, was looked for in every pelvis perfect enough. When it is present and distinct it points rather strongly to a female skeleton, though its absence does not necessarily indicate a male. It was well marked in the pelvis of L., which was buried with female ornaments, while in B., almost certainly a male, it was faintly marked.

The first part of the sacrum was present in six cases and I have paid special attention to the proportion which the facet for the fifth lumbar vertebra bears to the total breadth. It is sometimes said that in men the facet occupies a much greater percentage of the total width than in women. The following six observations, as far as they go, do not give very hopeful results.

| Skeleton. | Sex. | Width of facet. | Width of sacrum. | Percentage. |
|-----------|------|-----------------|------------------|-------------|
| A. | ♂ | 5.5 cm. | 12.9 ? | 43 ? |
| K. | ♂ | 5.1 " | 11.4 | 45 |
| I. | ♂ | 5.7 " | 12.4 | 46 |
| O. | ♂ | 4.5 " | 11.5 | 39 |
| L. | ♀ | 4.8 " | 11.4 | 42 |
| S. | ♀ | 4.7 " | 10.5 | 45 |

THE STERNUM.

In A. the manubrium was 55 mm. deep and 61 mm. broad just below the first rib.

In K. it was 49 mm. deep and 55 mm. broad.

APPENDIX.

Notes on three bronze age skeletons lately found near Sunderland and at present in the Sunderland Museum.

For these notes I am indebted to the courtesy of Dr. Coke Squance, of Sunderland, and, although I have not yet had the opportunity of seeing the remains, I think it well to give here the answers which Dr. Squance sent to my definite questions.

Skeleton No. 1 is thought to be a male one: his height is 5 feet to 5 feet 2 inches by tape measure.

| | | | | |
|---------|-----|---------|--------------------|---------------------------|
| Humerus | ... | 32 cm., | giving a height of | 163.5 = 5 feet 4½ inches. |
| Radius | ... | 25 " | " " | 168 = 5 " 6¼ " |
| Femur | ... | 44 " | " " | 164 = 5 " 4½ " |
| Tibia | ... | 36 " | " " | 164 = 5 " 4½ " |

These heights are estimated by Pearson's tables.

The humerus, femur and tibia all point to the man as having been between 5 feet 4 inches and 5 feet 5 inches, and it is possible that Dr. Squance rather underestimated his height with the tape.

The radius bears out the evidence of the Broadstairs skeletons in being longer in proportion to the other long bones than are radii of modern Europeans. All the evidence I have at present goes to prove that these people had long forearms.

The clavicle was 153 mm., which by my computation gives a shoulder breadth of some 15 inches.

Skeleton No. 2, Dr. Squance thinks is that of a female; her height was estimated at 4 feet 8 inches to 5 feet by the tape, but I have no evidence of the length of her bones.

The third skeleton was apparently very fragmentary.

Nos. 1 and 2 were platymeric and No. 1 was platynemic as well, and showed squatting facets, though the tibiae of No. 2 were not available for observation.

No. 1 showed signs of osteo-arthritis in the pelvic bones.

The skeletons were buried on their right sides in the characteristic flexed posture in a round barrow. They were brachycephalic, the male having an index of 83 and the female of 80·2.

CONCLUSIONS.

A. Bronze Age People.

These people have high, short, and broad skulls, with rugged features and prominent supra-orbital margins. Their eye sockets are shallow from above downwards, and their faces are long. Their palates are particularly well formed, and their teeth large.

The cubic capacity of the male skulls is about 1500 c.c., rather below that of modern Europeans.

The stature of these people does not seem to be as tall as is generally believed. The material I have been able to gather points to 5 feet 7 inches as the average for the males, but I have too few records to suggest any definite average for the females.

The men were strongly built, but not particularly broad-shouldered; the three of whose clavicles I have records averaged during life about 15 inches across the shoulders, perhaps a little more, if, as I have reason to believe, their deltoid muscles were very well developed.

The evidence at my disposal makes me think that an abnormal length of forearm was one of the characteristics of this race, at least this was the case in three skeletons out of four, including the one at Sunderland (*see Appendix*).

Many of the femora were platymeric and the tibia platynemic, and a squatting facet was present at the lower end of the tibia in every bone perfect enough to show it. These changes I am not at present inclined to regard as of any racial significance, but merely as an indication that chairs and tables were not in general use.

The femora of two skeletons showed an extraordinary amount of twisting of the shaft.

B. The Jutes.

The examination of these remains confirms the report which I presented to this Institute on Jutish skeletons from Folkestone (*Journ. Roy. Anthropol. Inst.*, vol. xli, 1911, p. 101).

The skulls were narrow and long, but certainly not low, and they contrasted markedly with those of the bronze age in having high orbital apertures.

The average height of the men was 5 feet 6½ inches, and of the women 5 feet 5 inches.

This small difference between the heights and also, apparently, the physiques of the two sexes is the most noticeable thing I have found in the examination of Jutish skeletons, and reminds us of what we believe to be the conditions at present existing among the younger members of our own upper classes.

The graceful, clean appearance of the long bones, already noticed in the Folkestone remains, was just as marked in these, and was largely due to the straightness of the bones, and to the comparatively small size of the bony ends.

Platymeria and platycnemia were quite common, as at Folkestone, and squatting facets were found on every available tibia. This last point, unfortunately, was not looked for at Folkestone.

Both the bronze age people and the Jutes seem to have been very subject to rheumatoid or osteo-arthritic changes in the bones as life advanced.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.

BY C. G. SELIGMANN, M.D.

[WITH PLATES XXV—XXXVIII.]

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IN the following paper I have attempted to weave together a number of strands of evidence that have only one feature in common, viz., they apply to people whom we regard as Hamites, or at least as having Hamitic blood in their veins.

The first portion of the paper dealing with the anatomical evidence was, in an abbreviated form, the subject of an Arris and Gale lecture at the Royal College of Surgeons during the spring of 1913. It was my intention at first to deal with the physical side of the problem only, but as I came to examine the material collected by Mrs. Seligmann and myself during two expeditions on behalf of the Sudan Government in the winters of 1909-10 and 1911-12, the belief underlying much of my recent work, that many of the customs and ideas which exist in the Sudan are not Negro, Arab or even Islamic as they appear at first sight, became strengthened, and I then decided to collect and publish as much as possible of the cultural evidence bearing upon the subject. In doing this I have made use in the first place of the material recorded in my own and Mrs. Seligmann's notebooks, and have supplemented this with an examination of a considerable number of modern authors, of ancient Egyptian records and mediæval Arabic writers. Comparison of this material leads me to believe that among the culture strata lying buried beneath the present day cultures of North-Eastern and Eastern Africa there are remains of one which presents such substantial affinities with that of ancient Egypt that there can be no legitimate objection to speaking of it as Hamitic. There is indeed some reason to believe that this stratum goes back to the times of an undifferentiated Hamito-Semitic culture, but whether this be so or not the idea of an underlying Hamitic culture layer is not only entirely consistent with the physical evidence but is supported in a remarkable way by Westermann's recent researches on the Shilluk and other Nilotic languages.

In view of the wide area from which the facts recorded in this paper have been gathered, I have been led to consult a number of friends and colleagues, to whom I am greatly indebted for ungrudging assistance. Foremost among them I would number Miss M. A. Murray and Professor T. W. Arnold, both of whom have given me information of the greatest value. Mr. C. M. Doughty has given me the benefit of his unique experience of Arabia. To Professor Westermarck, as also to Major A. J. Tremearne, I am indebted for information concerning the Berbers and West African Arabs, which, although not quoted here, has been of considerable assistance. On the physical side I have been guided by the methods elaborated by Professor Elliot Smith, and applied by him and his assistants, Drs. D. E. Derry and F. Wood Jones, to the anatomical material excavated by the Archaeological Survey of Nubia. I am further indebted to all these gentlemen for advice on special points, while the comparative material in the Reports of the Survey has been of constant assistance. Professor Waterston has courteously placed at my disposal his manuscript record of the measurements of Nilotes taken by the late Dr. Pirrie on the expedition which cost him his life, and some of the measurements printed in this paper will serve as a supplement to those published by Professor Waterston in his account of Pirrie's work.¹ I have also made use of a number of measurements taken by other investigators and would specially refer to the work of Drs. A. Mochi and C. S. Myers.

On the linguistic side I am greatly indebted to Mr. S. H. Ray; but for his help and advice I should scarcely have ventured to use linguistic evidence as freely as I have done, though he must not be held responsible for what I have written. Dr. B. Malinowski has greatly assisted me by the skill and care with which he has followed up a number of obscure references. I hope and believe that I have acknowledged in the text my indebtedness to all other authorities upon whom I have drawn. But above all I would acknowledge the assistance I have received from my wife, both by her constant help in the field while the observations which form the basis of this paper were being made and from the use of her notes and journal.

To introduce my subject I cannot do better than refer to any map which shows the distribution of languages in Africa at the present day.² It will be seen that Hamitic languages are spoken by peoples spread over perhaps one-fifth of Africa, and omitting Hottentot, which contains a Hamitic element, Bernhard Struck has been able to classify them into forty-seven stock languages and seventy-one dialects. The area inhabited by people regarded as Hamitic is even larger, including, as it does, many tribes superficially semiticized under the influence of Islam, for before the Arab expansion Hamitic languages must have been spoken over by far the greater part of the northern half of the continent.

¹ "Report upon the Physical Characters of Some of the Nilotic Negroid Tribes," *Third Report of the Wellcome Research Laboratories* (1908).

² Such, for instance, as that given by Meinhof in *Die moderne Sprachforschung in Afrika*. Berlin, 1910.

Considering these facts it might seem reasonable to expect that no insuperable difficulty should exist in tracing the migrations and defining the home of the stock which has given rise to so many peoples spread over so vast an area, but, in fact, the very reverse is the case, the cradle-land of the Hamites, though generally considered to be Arabia, is unknown.¹ It cannot be said that a uniform physical type exists; little is known of the migrations of this widely civilizing people, so little indeed, that anthropologists have as yet scarcely sought to define them. Yet lest it should be thought that the Hamites are but a rude and insignificant folk, concerning whom there is little to be discovered, let me once more repeat what many others have said, namely, that even now, after years of controversy, we have no direct knowledge of the home of the Aryans and that there is every reason to believe we shall never know the physical characters of the primitive "Aryan" race.

I do not propose to deal with such high matters, and shall be content if I can throw some added light on the Hamites of the Anglo-Egyptian Sudan and show that the least modified of these are physically identical with the predynastic Egyptians. I shall also indicate that just as the Zulu-Kaffirs contain a strong Hamitic element, so the Nilotic Negroids of the Sudan contain a varying, and in some tribes considerable, amount of Hamitic blood. I shall also try to demonstrate that among the Hamites of the Anglo-Egyptian Sudan and those tribes of mixed Negro and Hamitic origin, the Nilotes and their congeners inhabiting British and German East Africa and the neighbourhood of the Great Lakes, there exist certain non-Negro and non-Semitic customs which, though possibly not characteristic of all Hamites, may be regarded as characteristic of a great group of Hamitic peoples and therefore diagnostic of Hamitic influence.

It is usual to recognize two main divisions of the Hamitic stock which, following Sergi, may be called (i) The Northern Hamites (or Mediterranean race); (ii) The Eastern Hamites or Ethiopians. These two groups shade into each other, and in many parts a Negro admixture has taken place, nevertheless, culturally if not always physically, either division stands apart from its fellow.

In this paper I deal with the members of the eastern division only, and with some of the mixed peoples who have sprung from its contact with other races.

The Beja.

Excluding Abyssinia, eastern tropical Africa north of the equator is divided by the Nile into two great ethnological provinces, an eastern province, inhabited almost entirely by Hamitic peoples who do not speak Arabic and such "half-Hamitic"² tribes as the Masai, Nandi, etc., and a western, occupied by nomad and

¹ Sergi suggests Africa (*Antropologia della Stirpe Camitica*); Stuhlmann looks to Asia, perhaps in the neighbourhood of the Persian Gulf (*Handwerk und Industrie in Ostafrika*).

² I propose to use the term half-Hamite as a convenient, if not very exact, synonym for those predominantly pastoral peoples of East Africa who, having arisen as the result of the admixture of Hamite with Negro, retain many Hamitic traits and do not speak Bantu dialects. Though illogical the latter limitation is, I think, convenient in the present stage of our knowledge, if necessary it can be ignored later.

sedentary Arabic-speaking "Arab" tribes, the result of the fusion of Arab invaders with the previous inhabitants of the country, the whole well tintured with black blood. The admixture of much Negro blood becomes less surprising when it is remembered that west of the Nile the Nilotic Negroids occupy the country north of the Nile-Congo watershed, extending in a compact mass to about 9° N. lat. and beyond this occupying the banks of the White Nile to within about 300 miles of Khartum.

At the present day the true Hamitic area of the Anglo-Egyptian Sudan extends from the Red Sea to the Nile, from the Egyptian boundary in the north to the neighbourhood of the junction of the Atbara with the Nile. South of this there are no easily defined natural boundaries, but the tribes do not come west of the Atbara in any strength, so that, roughly speaking, this river may be considered their western limit until it reaches the Abyssinian boundary between 15° and 14° N. The area so defined embraces the Red Sea coastal plain and the whole of the Eastern Desert which, south of Tokar (about 18° 30' N.), gives place to hills and irregular much dissected plateaux, grass covered and well watered for a considerable part of the year. Clouds and heavy dews are common on these hills and the traveller from the Eastern Desert or the arid steppes of Kordofan is surprised to find, even as late as March, an abundant crop of yellow trefoil, scarcely differing from our own *Lotus corniculatus*, and flowers of such homely genera as *Mentha*, *Geranium*, and *Saxifraga*.

Though not richly vegetated from a European point of view, the comparative fertility of these hills affects the entire family and tribal life of the Beja in a manner difficult to realize before experiencing the sun-parched steppes of Kordofan, where surface water does not exist in the dry season and where wells are few and far between. Rocky hill-sides and arid peaks often hide pleasant valleys clothed with fresh green-leaved trees and shrubs that afford fair pasturage for camels and goats. Where the vegetation looks brightest a hole dug a few feet in the shingly soil will assuredly yield water, and places where the water lies on the surface throughout the year are not unknown. One such *fula* was described in glowing terms by an inhabitant of Sinkat as holding enough water for the whole world to drink from. It was a pretty enough little pool under the shadow of a great rock. Instead of the number of people and cattle who might have been expected to have gathered there by anyone who had seen the people collected around similar surface pools in northern Kordofan, only three or four men and women were found watering their goats and sheep and filling skins with drinking water with which they loaded their camels and donkeys. To obtain this it was only necessary to dig about a foot deep in the shingle by the side of the pool, and although the dry season was half over it was evident that numerous other wadies were still yielding water. Stonecrops, salvia and a plant resembling sea-holly grew in scattered clumps. Higher up were wide plains where the ariel fed on the dry grass that grew among the thorn bushes and liliaceous plants bearing clusters of red waxy flowers. Here stiff, candelabra-like euphorbias characterized the scene. Riding

along stony passes, valleys and hill-sides clothed with soft green grass may be seen now and again. Further south the pasturage is more luxuriant, indeed, in March, 1911, the hills round Khor Gamarota were all covered with fine sweet grass, the music of running water (due, it was said, to an unusually large rainfall on the Abyssinian slopes) was heard in the *kheiran*, and at Asserama Derheib the ground was carpeted with trefoil and sweet-scented heliotrope. Between the hills and the sea lies the maritime plain, in places bare salt marshes, but more generally covered with coarse grass making a good grazing ground for camels. As a rule in the Sudan pastoral tribes and even clans with territory of their own may not stray beyond their own borders, but in this part the knowledge that water may be found nearly everywhere allows a certain freedom of movement. For instance, Gebel Erkowit is in the territory of the Sherab division of the Hadendoa, but owing to the extremely cold weather the Sherab descended with their camels to the coastal plain in the spring of 1911, and another section, whose grass had been exhausted, came to Erkowit to graze their cattle, the Sherab making no objection. Thus, inter-tribal strife on account of wells and grazing grounds is not at all common, nor do the people need to move in large numbers in order that the women, cows, and goats may be within reasonable distance of the known water supply of the district. On the coastal plain the water is brackish, hence women who do not like camel's milk usually stay on the hills.

Except at places like Sinkat, where the inhabitants have almost given up their nomad life, tents are usually seen in groups of three or four. In the dry season some of the men must take the camel herds to the best and widest pastures, many of the herdsmen of the Hadendoa (especially of the Sherab and Bishariab divisions) going to the coastal plain, and the Ashraf and the Artega to the green hills south of the Khor Baraka, while their families move about in small groups, erecting tents that vary in size according to the length of their proposed sojourn, which, of course, is regulated by the amount of pasturage for their cattle. Where the halt is likely to be for a few days only a tent of three or four mats is enough, or even a ruder shelter may suffice. There will be a rough zariba for the young goats and sheep, or they must be brought inside the tent at night. Dead euphorbia stems afford excellent protection when driven into the earth in a semi-circle and slanted so that their light wood forms both walls and a half-dome roof. Such shelters are built wide for the cattle and are further strengthened at night with thorn. Smaller circles, forming real huts in which the people live, are sometimes seen, and in these cases tents are dispensed with altogether. Many such encampments wherein the people were likely to stay till the end of the dry season were seen on the Erkowit slopes.

Further south in a dry river bed the Beni Amer had taken advantage of a place where the wet season torrent had cut a bay, leaving a cliff-like bank some 10 feet high; this natural shelter was improved with mats, wood and thorn, and three families had settled there for the dry season. The pasturage in this neighbourhood was unusually good, and though this particular *khor* was no longer yielding water, there was a plentiful supply in another valley not more than

5 miles distant. In the same locality those who possessed sufficient mats had erected fairly commodious tents.

The tribes inhabiting the area under consideration may be divided into three groups:—

- (i) The Bisharin, extending for some 80 miles south of the Egyptian boundary, and occupying a strip of territory stretching along the right bank of the Atbara.
- (ii) The Hadendoa, comprising a number of closely allied tribes of which the Hadendoa is the strongest and best known. Including the Amara, the Nurab, the Ashraf and the Artega, the country of the Hadendoa extends south and east of the Bisharin territory as far as Tokar and the Khor Baraka. Scattered groups of Hadendoa are found among the hills to the south of this *khor*, though here the Beni Amer so predominate that the country must be considered to belong to them. East of the Khor Baraka and its main tributary the Khor Langeb the country belongs to the Hadendoa, who stretch south-west to the Abyssinian border in the neighbourhood of Kassala.
- (iii) The Beni Amer, who occupy the country south of the Khor Baraka and extend into Eritrea, where they are one of the most important elements in the population.

The Bisharin and Hadendoa (and allied tribes) speak a Hamitic language called To Bedawi, the Beni Amer speak a Semitic language known as Tigre. Except for a few hours spent in the company of some Bisharin sailors from the neighbourhood of Donqonab¹ I have no first-hand knowledge of this tribe, but my conversation with these men, supplemented by information given me by Mr. C. Crossland, enables me to state confidently that the social organization and general culture of the Bisharin and Hadendoa are identical in all essentials. Further, in spite of the difference in language, the habits of the Beni Amer and Hadendoa are practically identical, although the latter are, on the whole, a fiercer, wilder people than the Beni Amer, whose manners appear to have been softened by the same Semitic cultural influence that has given them a Semitic language.

The Bisharin and tribes of the Hadendoa group are extremely democratic, and this, no doubt, is fostered by the independence resulting from their mode of life, as well as from their consciousness of a common origin.² By all accounts the

¹ Donqonab is on the Red Sea coast, in the neighbourhood of Mahommed Gul.

² It is said that the nation is descended from one Hadat, whose grave on the bank of the Khor Amet is still recognized. Her husband was one Mohammed Barakwin, from the other side of the Red Sea, and a descendant of Abbas, Mahommed's uncle. Her seven sons gave rise to seven of the divisions of the Hadendoa, namely, Gamilab, Gurhabab, Hamdab, Amirab, Wellaliab, Samaraidoab and Shebodinab. The sons of the founders of these divisions married the daughters of the land and from these unions sprang the Hadendoa nation. This legend illustrates two interesting points; the traditional origin of the tribe from a woman agrees with

Hadendoa would, if the necessity arose, yield ready obedience to the head of the Wellaliab division in the neighbourhood of Kassala, who is recognized as the old hereditary paramount sheykh of the Hadendoa. But the local sheykh who, in some cases at least, owe their position to the Government, do not seem to be greatly revered, unless they are also men of distinction in religious matters, when they may wield very real influence, as in the case of Sidi Hassan of Tokar, who is looked up to as a fiki and whose invocations, when muttered over a knot he is tying, are believed to be of undoubted efficacy. The social organization of the tribes consists of a number of divisions (called by the Hadendoa *bedana*) with patrilineal descent and with territorial limits more or less strictly fixed. In spite of the latter there is a very considerable degree of give and take in the arrangements made for the pasturage and watering of the flocks, and while the boundaries of each division are known, they are by no means strictly adhered to in practice. This applies even to such large units as tribes, for the Hadendoa allow the Amara to graze their beasts freely over their lands for no other reason than that the territory of the Amara is inconveniently small in relation to the number of their flocks and herds. The Amara and the Hadendoa divisions in the neighbourhood of Sinkat and those around Suakim, in other words the strongest and most advanced divisions of the tribe who have long been subject to foreign influence, practise some cultivation, using the land at the edge of the *chor*, or even within it when no other is available; on the other hand, some of the more isolated and backward divisions living among the hills inland in the neighbourhood of the Italian frontier have absolutely no cultivated land. Such divisions, of which the Bedawib and Sinkatkenab may be taken as examples, are in many respects far more backward and uncontaminated by foreign (Arabic) cultural influence than the condition of the mass of the tribe would *a priori* suggest.

The Bedawib do not cultivate at all and it is said that they would not touch grain even if it were given to them so that they live almost entirely on milk and meat. They have no camels,¹ their tents are small, poor and rough, and their weapons are the spear, curved dagger and circular shield. The sword, which under Arab influence has penetrated everywhere throughout the non-Negro portion of the Sudan, is scarcely known among them.

Although I have written of the Bedawib as though they undoubtedly belonged to the Hadendoa group, their political position tends at first to make their relationship obscure. Thus, they speak both Tigre and To Bedawi, and both Hadendoa and Beni Amer unite in regarding them as their inferiors, though the latter

what is said by mediæval Arab historians concerning the matrilineal succession and matriarchal habits of the Beja, and the dragging in of a descendant of the prophet as ancestor illustrates the marked tendency which all these tribes exhibit to glorify everything Arabian, no matter how remotely connected with Mecca. I shall have occasion to refer to both these matters again in this paper, meanwhile, it is sufficient to note that the Hadendoa call themselves "Arabs" and speak of a number of Arab tribes by their tribal names or sometimes call them Bedu.

¹ Although the Bedawib live south of the desert zone, their country is well adapted to the camel, which is most highly valued by the surrounding tribes.

accentuate this far more than the former, calling them *tigri* and speaking of them almost as slaves, though they admit that they could never sell them.¹ Various accounts are given of the origin of the Bedawib. According to some they are degenerate Beni Amer who have learnt to speak Hadendoa by contact, often hostile, with the latter; other accounts speak of them as a people of composite origin formed largely by the fusion of broken men and escaped slaves. Another opinion is that they are a sort of inferior Hadendoa, and this was perhaps the general view taken by members of the most northern tribes, the Hadendoa and Artega, with whom the matter was discussed. I have little doubt that this view is, broadly speaking, correct; the build and physiognomy of those Bedawib with whom I came in contact convinced me that they belonged to the Hadendoa stock. It was admitted by my best informant² that at one time, long ago, the Bedawib had their own chief and were in an independent position, so that considering their appearance and language there is no reason why they should not be looked upon as outliers of the Hadendoa, who have acquired a knowledge of the Tigre language from contact with the Beni Amer. No doubt there has been considerable pressure from the south leading to the overlapping of the most northern Beni Amer and the most southern Hadendoa groups. My experience suggests that the greater part of the evidence for this must be sought among the Tigre-speaking tribes rather than among those speaking To Bedawi, for in the list of eighteen main divisions of the Beni Amer given me by Saleh Idris, seven are given as Tigre-speaking, six as speaking To Bedawi, and five as using both languages. This list includes Bedawib, the Sinkatkenab, and the Labet; the first two being considered to belong to the Hadendoa group. This view is supported by a remark of Makrizi that Suakim was inhabited by Hāsa, whom he calls Khāsa just as the Arabs do at the present day.³

Democratic feeling, so strong among the Hadendoa, is weaker among the Beni Amer, who differ from their northern neighbours in that they are a nation that has arisen from a number of politically distinct elements, rather than a people formed by the cohesion of a number of closely related divisions. Thus from the national standpoint the Beni Amer are less homogeneous than the Hadendoa and kindred tribes, for they include a number of To Bedawi-speaking or bilingual communities, whose physique and appearance betoken northern rather than southern origin. These communities have, in fact, been subdued by the northward advance of the Tigre-speaking tribes⁴ so that it is not surprising to find that among the Beni Amer

¹ Tigri is also the term applied by the nobility of the Bogos—a Hamitic people of Abyssinia—to the mass of the tribe, about double themselves in number, who stand to them somewhat in the position of vassals (*cf.* Munzinger, *Sitten und Recht der Bogos*, pp. 43–47).

² One Saleh Idris, an elderly man of Aqīq, closely connected with the ruling family of the Beni Amer.

³ Quatremère, *Mémoires sur l'Égypte*, II, p. 155.

⁴ The Beni Amer call their language Hāsa, which is also the name of their strongest division. I have heard this term loosely applied to include the two numerically powerful divisions Beitmala and Afenda.

certain divisions rank far above others, and it is no exaggeration to speak of the highest of these as forming an aristocracy.¹

The following table shows some of the chief physical characters of these closely allied tribes which are capable of being expressed in figures:—

| | No. | C.I. | N.I. | F.I. | Stature. |
|----------------------------|-----|-------------|-------------|-------------|----------|
| Bisharin ² ... | 78 | 79.00 | 76.08 | 104.12 | 1650 |
| Hadendoa ... | 54 | 76.39 ± .26 | 71.58 ± .67 | 92.78 ± .56 | 1676 ± 5 |
| Beni Amer ³ ... | 51 | 74.70 ± .32 | 70.52 ± .63 | 92.12 ± .49 | 1643 ± 5 |

The most striking feature of these figures is the steady rise in cephalic index from 74.7 in the south (Beni Amer) to 79 in the north (Bisharin).

The absolute measurements afford valuable confirmatory evidence of the nature of the change, and show that whereas the length of the head in the Hadendoa is only slightly less than that of the Beni Amer, the breadth of the head is definitely increased.

| | No. | H.I. | H.B. | N.L. | N.B. |
|---------------|-----|--------------|--------------|-------|-------|
| Hadendoa ... | 54 | 189.97 ± .52 | 145.1 ± .48 | 51.86 | 36.95 |
| Beni Amer ... | 51 | 190.49 ± .58 | 142.25 ± .49 | 51.96 | 36.57 |

The absolute length and breadth of the nasal measurements are given for the sake of completeness, though their close agreement is probably not specially significant, for, generally speaking, the noses of the two peoples are by no means similar in shape, and in some cases present such extremes of variation as are shown in Plate XXVII, Figures 1 and 2, and in Plate XXIX, Figures 3 and 4.

There are, in fact, so many more or less well-marked physical differences between Hadendoa and Beni Amer that it is not difficult, after a little experience, to pick out by their appearance only the majority of the members of the two tribes

¹ At the present time the Nabtab are the head of the Beni Amer (my information applies only to those in the territory of the Anglo-Egyptian Sudan), and in a loose way which implies little more than the collection of a certain amount of tribute, may be said, I believe, to rule the Beni Amer from Aqiq. According to local tradition, the Nabtab attained this position at the expense of the Bello, the former leaders of the Beni Amer, a people of uncertain origin, none of whom remain in British territory, though according to Munzinger (*Ostafrikanische Studien*, p. 287) they still ruled certain territory north of Massaua fifty years ago.

² Measured by M. E. Chantre, cf. *Recherches Anthropologiques en Égypte* p. 255, (Lyon, 1904).

³ These were all genuine Beni Amer, i.e., all belonged to old and important Tigre-speaking divisions.

in a mixed gathering. Broadly speaking, the Hadendoa are more strongly built than the Beni Amer, while a considerable number exhibit Negroid traits. Further, the "Armenoid" or so-called "Jewish" nose is by no means uncommon among them, though it is not usual to find it in so exaggerated a form as in the man shown in Plate XXIX, Fig. 4. In spite of these differences and the rise in cephalic index the general biological characters of the two peoples are so similar that there can be no doubt that the Hadendoa are representatives of the Beni Amer stock modified by foreign influence. In support of this view I would specially draw attention to the character of the hair, the colour of the skin, and the general conformation of the cranium and face.

No absolute measurements can be given for the Bisharin, as Chantre records only indices, but the rise of three or four units in the nasal index is probably of little significance.

Although the Beni Amer are shorter than their northern congeners there is no regular rise in stature as there is in cephalic index from south to north. The very considerable difference between Beni Amer and Hadendoa is no doubt to be explained as a result of miscegenation with the tall Negroes of the Nile Valley. It needs only a glance at any considerable gathering of Hadendoa to be convinced that as a people they have absorbed much Negro blood. My impression is that the Bisharin are less mixed, but I have seen so few that this must remain a conjecture.

The rise in cephalic index from 74.7 in the south (Beni Amer) to 79 in the north (Bisharin) can only be due to the intrusion of a foreign element. The most enthusiastic believer in the modifying effect of environment will scarcely claim effective influence for the slight change of climate between the south and north, indeed, what change there is seems to be in the wrong direction, for the inhabitants of the somewhat moister hills or hilly uplands are longer headed than those of the lower desert country to the north. This foreign element can scarcely be Negroid, for the tall, extremely dolichocephalic Negroids (Shilluk, Dinka, etc.) of the Nile Valley cannot be held responsible for the increased tendency to brachycephaly shown by the Hadendoa and Bisharin, although they probably are the cause of the increase in stature noted among the Hadendoa.¹

¹ It is true that this argument does not suffice to negative influence exerted by the round-headed Burun occupying the country immediately north of the Sobat River, nor the mesaticephalic Nuba of Southern Kordofan, the two nearest populations showing any degree of round-headedness, but there is not the slightest reason to suppose that either of these people have affected the Beja, and it would be mere gratuitous assumption to bring them seriously into the argument. Indeed, the geographical difficulties in the way of any considerable contact between the two people seem to be insuperable. Further, there is no trace of any cultural drift from these western Negroids to the Beja in the east. Similar arguments serve to eliminate the possibility of the comparative round-headedness of the northern Beja tribes being due to influence exerted by the mesaticephalic brownish-skinned Negroes or Negroids now occupying the Nile-Congo watershed and its neighbourhood. With regard to the influence of Negro slaves no information was obtained in the Red Sea Province, but among the Kababish, the strongest tribe of nomad Arabs in Kordofan, the larger number of female slaves appear to be Dinka while some come from Dar Fertit.

Nor does it seem reasonable to regard Egypt, with its strangely homogeneous sedentary population of dolichocephals or low brachycephals,¹ as responsible for the tendency to round-headedness that exists in the Bisharin and Hadendoa. Even if a certain amount of fusion of dolichocephalic Beja and mesaticephalic Egyptian be postulated, this could hardly have the effect of raising the cephalic index of the Bisharin to 79. To the west lies the Red Sea with a brachycephalic Arab population occupying the Hejaz and the Yemen.² At first sight it would seem that it is these brachycephals who are responsible for the mesaticephaly of the Bisharin and the plausibility of this view appears to be enhanced when it is remembered that there has been continual traffic between the opposite coasts of the Red Sea. Yet on careful examination it appears that there are difficulties in the way of accepting this idea. Where Semite (Arab) and Hamite have mixed, the latter have ever adopted the language of the former, and when mixed peoples have arisen I think it can be said that they are more Arab than Hamite. It is clear that nothing of this sort has happened in the Red Sea Province of the Sudan. Except in the neighbourhood of the towns, Arabic has not made progress among any of the Beja tribes who have kept their own language and such of their old cultural peculiarities as were not summarily rejected because they were opposed to Islam. Since the round-headed influence under consideration did not come from the east, south, or west it is necessary to consider whether it may not have come from the north, and on examination everything seems to favour this view. In the north there is a round-headed Armenoid population which, as Elliot Smith has suggested, exerted a profound influence on Egypt from the earliest times. This population once having begun to press south, would probably exert an even greater influence on the eastern side of the Red Sea, because this area is nearer its homeland, and could never have been capable of supporting a native population comparable in size to that occupying the Valley of the Nile. It follows that the brachycephals who influenced the northern Beja were these same Armenoid intruders, and this explains the occurrence of the so-called "Jewish" nose which, as already stated, is by no means uncommon among the Hadendoa, while no instance was noted among the Beni Amer. There are no data available which allow of any precise estimate being formed of the time when these foreigners entered the country, but the paintings of the Aamu on the walls of the rock tombs at Beni Hasan indicate that

¹ C. S. Myers, "Contributions to Egyptian Anthropology," in the *Journ. Roy. Anthropol. Inst.* for the years 1903 to 1908. These papers contain a large number of measurements, e.g., 136 men of Kena and Girga Provinces give an average cephalic index of $74.13 \pm .23$ (*Journ. Roy. Anthropol. Inst.*, vol. xxxvi, 1906, p. 239).

² The cephalic index of seventeen males from the Yemen works out at $83.18 \pm .73$; twelve males from the Hejaz give 79.25. These averages are calculated from the figures given by Mochi, "Sulla Antropologia degli Arabi," in *Archivio per l'Antropologia et la Etnologia*, vol. xxxvii, 1907. Mr. G. Wyman Bury has published photographs of a number of hillmen from Southern Arabia (*The Land of Uz*, London, 1911). These show that many of his subjects have pronounced Armenoid noses, such as might be expected to accompany round-headedness due to northern influence, cf. specially plates facing pp. 233 and 296, the subject of the latter closely resembles the pronounced type of Hadendoa shown in Plate XXIX, Figs. 3 and 4.

strangers with the most pronounced type of Armenoid physiognomy were received in Egypt as early as the twelfth dynasty. In this painting the four men following the chief are armed with bows, spears, and throwing-sticks; since they carry the latter perhaps they may be regarded as dwellers in the Eastern Desert, though this is not Professor Petrie's view, for he considers that their rich clothing indicates that they come from a country less sterile than the Red Sea desert and would connect them with Northern Arabia. Yet, during the twelfth dynasty, when these Armenoids were being received in Egypt, Egyptian artists less than 50 miles south of Beni Hasan were recording with unsurpassed fidelity the appearance of contemporary desert men uncontaminated by Armenoid influence. Mr. A. M. Blackman has recently copied a number of representations of these people from a tomb chapel at Meir on the west bank of the Nile some 30 miles north of Assiut, and a photograph of the best preserved of these paintings has been published by the Egyptian Exploration Fund.¹ Owing to the kindness of the Committee of the Fund and of Mr. Blackman I am able to give a reproduction of this photograph so that no long description is necessary. It will be seen at once that the figure (Plate XXX, Fig. 1), which I regard as one of the most successful examples of racial portraiture standing to the credit of Egyptian artists, represents a Beja. The long thin figure and limbs, with broad chest, narrow flanks, and almost retracted abdomen are no doubt conventional and exaggerated representations of the characteristics of the pastoral desert men as they appeared to the agricultural Egyptians, but there can be no criticism of the splendid naturalism of the lined face, the thin pointed nose and the mop of hair projecting over the forehead, and standing out stiffly over the whole head to the nape of the neck. The beard is the usual chin tuft of the Beja tribes.

From what has been said it is obvious that while the Bisharin have been most modified by the foreign round-headed element, the Beni Amer are the least influenced, so that, broadly speaking, their physical characters may be taken to be those of the original Beja inhabitants of the Eastern Desert.

Summarizing their physical characteristics it may be said that they are moderately short, slightly built men, with reddish-brown or brown skins in which a greater or less tinge of black is present, while in some cases the skin is definitely darker and presents some shade of brown-black. The hair is usually curly, in some instances it certainly might be described as wavy, but the method of hair dressing adopted tends to make difficult an exact description of its condition. Often, as is everywhere common amongst wearers of turbans, the head is shaved. Where the hair is very tightly curled or approaches the woolly, this is to be regarded as evidence of Negro admixture, and indeed in these cases there is generally other physical evidence of Negro influence. The development of hair on the body varies considerably, often there is none on the chest, but a considerable quantity may be present. The face is usually long and oval, or approaching the

¹ *Archæological Report of the Egyptian Exploration Fund, 1911-1912, Plate VIII.*

oval in shape, the jaw is often lightly built, which with the presence of a rather pointed chin may tend to make the upper part of the face appear disproportionately broad. The nose is well shaped and thoroughly Caucasian in type and form, except in those individuals, comparatively few in number, in whom Negro influence may be suspected. The hair on the face is sparse, slight side-whiskers, moustache, and chin-tuft beard are the rule, leaving the area between the lower lip and the chin bare, while there is also some considerable space between the whiskers and the moustache. Occasionally when the facial hair tends to outgrow these limits shaving may be resorted to in order to reduce the beard to the usual type. Not uncommonly, especially in the younger men, the whole face is shaved. A comparison of Figs. 4 and 5 of Plate XXX will show the resemblance of the chin tuft of the present day Beja to the beard of the protodynastic Egyptians, Fig. 4 being a drawing from the photograph of an ivory head found at Hierakonpolis.¹ The general resemblance of the Beja to some ancient Egyptians will, I think, be appreciated on comparing the photograph reproduced in Fig. 3, Plate XXX, with that of the Turin statue of Rameses II. (Plate XXX, Fig. 2).

The skull is moderately long and not particularly high; in the Hadendoa skulls, to which reference is made later, the height is less than the breadth. In shape the skull is a more or less well-filled pentagon or oval often showing a very notable prominence of the occipital region. This is especially common and clearly marked in the less well-filled skulls and is often to be appreciated by the hand as a definite bulge in the calvaria when it cannot be detected by the eye owing to the mop of hair. In some instances it appears that this projection is only relative and is, in fact, an expression of a marked supra-occipital flattening. Turning to the skulls already referred to, although they are not Negroid they exhibit certain primitive characters. The supra-orbital ridges are absent, or only very slightly developed, the nares may open directly upon the canine fossæ, and there may be a slight amount of subnasal prognathism. The jaw is usually slight with a short broad ascending ramus and a broad shallow sigmoid notch. The coronoid process is, for the most part, slightly or moderately developed so that the notch has somewhat the shape of a short bow or well-curved throwing-stick with equal limbs. In two instances, however, the process and the notch are of a different type; in these the process is taller, its anterior margin has a forward curve, the notch is narrower, and as a result tends to assume more the form of a fish-hook with a somewhat open bend than that of a bow or throwing-stick.

So far the comparisons made have all been within the Beja group, but consideration of the physical characters of the Beni Amer detailed above indicates that these people closely resemble the predynastic Egyptians and certain of the people dating from predynastic times onwards to about 2000 B.C., whose remains have been found in large numbers in Lower Nubia between Aswan and Korosko.

¹ *Hierakonpolis*, I, Plate VI, Fig. 4. I am indebted to Professor Petrie for permission to publish this drawing as well as for the print of the statue of Rameses II, reproduced on the same plate.

The following table brings out some of these similarities, corrections of

| | No. | H.L. | H.B. |
|--|-----|--------|----------------|
| Beni Amer (C. G. S.) | 51 | 183.5 | 133.75 |
| Earliest predynastic Egyptians from Naga-ed-Deir ¹ | 45 | 184.8 | 131.5 |
| Naqada ♂ ² | 139 | 185.13 | 134.87 |
| Late predynastic Egyptians (Mac- Iver) ³ | 125 | — | 133.5 |
| Early dynastic from Nubia, Group A ⁴ | 91 | 183.0 | 134.3 (82) |
| Middle Nubian, Group C ⁵ | 60 | 181.8 | 133.05 (58) |
| Ditto ⁶ | 123 | 183.0 | 134.0 (117) |

7 mm. for the length and 8.5 mm. for the breadth having been applied to the averages of the Beja (living) to make the absolute measurements of the length and breadth of their heads comparable with those taken on the skeleton,⁷ while for the same reason two units have been deducted from the cranial indices of the living.

In stature the Beni Amer and the predynastic Egyptians stand close together, the former measuring about 1.64 m. and the latter 1.63 m.⁸ It seems then that it is justifiable to regard the Beni Amer, the least modified of the Beja tribes, as

¹ Elliot Smith and Wood Jones, *Archæological Survey of Nubia*, p. 22.

² Quoted by Elliot Smith and Derry, *Archæological Survey of Nubia*, p. 23.

³ *Ibid.*, Bulletin No. 6, p. 20.

⁴ Elliot Smith and Derry, *op. cit.*, p. 17.

⁵ *Ibid.*, p. 16.

⁶ *Ibid.*, p. 17. A good deal of interest attaches to the figures for the two groups of Middle Nubians (Group C) as showing the results of dealing with long series. The second series includes the first, but it is only on considering the additional material that it is seen that Groups A and C are identical.

⁷ In subtracting 7 mm. for length and 8.5 mm. for breadth I have followed Professor Elliot Smith who, as the result of a series of observations on Egyptian corpses, finds that these are "the maxima that can safely be deducted from the averages in dealing with Egyptian material" (*Archæological Survey of Nubia*, Cairo, 1910, vol. ii, p. 25). As the result of investigations on aged members of the White race Dr. John H. Anderson, in a paper which appeared in vol. xl, 1910, of the *Journ. Roy. Anthropol. Inst.*, suggests that about 9 mm. should be subtracted from both length and breadth.

⁸ *Archæological Survey of Nubia*, vol. ii, p. 19.

the modern representatives of the old predynastic Egyptian (and Nubian) stock, and it further appears that the modification undergone by the latter during a period of some 7,000 or more years is extremely small.

An examination of a small series of Hadendoa skulls, now in the Royal College of Surgeons, affords nothing but confirmation of the view that these Beja tribes are closely related to the proto-Egyptians.¹ Owing to the courtesy of Professor Karl Pearson and Dr. Derry I have been able to compare these with a number of the Naqada skulls and also a few sent to this country by the members of the Archaeological Survey of Nubia. Comparing the Hadendoa with the Naqada skulls it is at once obvious that there is the closest resemblance in general appearance and biological characters, with this reservation, that the Hadendoa crania are, generally speaking, rather better filled than are the Naqada skulls that I have handled.

This conclusion is further borne out on comparing the photographs of the skulls and jaws (only three of the latter) figured in Miss C. D. Fawcett's paper on the Naqada crania.² In individual instances the resemblance is astonishingly close, thus a skull numbered 1417, though less well filled, is very like Hadendoa No. 5 and even more closely resembles Hadendoa No. 6. So, too, Naqada 1505, though slightly more massive, is very like Hadendoa No. 1. The jaws are so similar that it is no exaggeration to say that they might have come from a single family burial ground. In all there is the rather weak bone development, the short broad ramus, and the wide shallow sigmoid notch.

The Hadendoa skulls also closely resemble some of the Nubian C group skulls shown to me by Dr. Derry. I would especially refer to 76/87 female which, though longer (L. 183, B. 130) than Hadendoa No. 1, closely resembles the latter, while 87/39, a female skull which has the appearance of a male, is very like Hadendoa No. 3, both being good examples of the proto-Egyptian (predynastic) type.³

I may emphasize this similarity in type by quoting Elliot Smith's description of the earliest known inhabitants of Upper Egypt. These "were a people slightly below the average size of mankind. Their muscular development was so feeble that it frequently becomes a very difficult problem to determine to which sex an isolated skull or long bone belonged. Their physical characteristics exhibit a

¹ I consider these skulls male because they were obtained under circumstances that make it almost certain that they are so, though the appearance of some of them is such as would render sexing difficult or even impossible. A description and the chief measurements of these skulls are given at the end of this paper.

² In only two of the Hadendoa skulls have the jaw bones been preserved, but there are other jaws available for examination. Two of these appear to be of a different type (Armenoid), ignoring these, what I have said above holds good of the remaining.

³ Measurements do not bear out the close resemblances between the Hadendoa, Naqada, and Nubian (C group) skulls, which are readily detected by the eye, doubtless because the number of Hadendoa skulls is too small for fair comparison; for the same reason there is a discrepancy between the figures obtained from living Hadendoa and from the skeletal material derived from this tribe.

remarkable degree of homogeneity. Their hair was dark brown or black, and either straight or wavy, without the slightest suspicion of any Negro characteristics. In the men there was the scantiest development of facial hair, except on the chin, where a tuft was found recalling that seen in the conventional portraits of the later dynastic Egyptians. There are many other features of the skeleton and soft parts which are quite distinctive of these people, but I shall refer only to two or three points to illustrate my meaning. These people had long, narrow heads with an exceptionally narrow forehead and prominent occiput, so that the skull, when viewed from above, presents a characteristic form, which Professor Macalister has aptly termed 'coffin-shaped.' The face was a moderately long and narrow ellipse; the nose was broader and especially flatter than that of the European, without, however, being definitely Negroid, the horizontally placed, elliptical orbits were often decidedly flattened, and the chin was almost always pointed.¹

Under the title *Crania Habessinica* (Rome, 1912) Dr. Sergio Sergi has recently published the results of his careful study of the long series of Tigre skulls collected by Schweinfurth and sent to Berlin. A glance at the plates shows that these skulls belonged to a people having the same general cranial type as the Beja, and although only seven mandibles are figured it can be seen that the majority of these are of the proto-Egyptian type. Nevertheless, some of the skulls are decidedly higher and rounder, a total of 94 adult skulls of both sexes giving 5 brachycephals and 29 mesaticephals.² Some such result as this might be expected in view of Schweinfurth's account of the northern Abyssinians. "The North Abyssinians or Tigri are in any case a very mixed race Although I have paid attention to thousands I have always failed to find a single common feature, a characteristic peculiarity in their appearance, by which, in the majority of cases, they might be distinguished from the other races of this district, for instance, the Hamitic Habab, and Beni Amer. The one thing in common binding them together is their speech, a branch of the old Geez"³

This account suggests that the Tigre-speaking natives of Abyssinia are more mixed than the Beni Amer of the Anglo-Egyptian Sudan, and this idea is confirmed on examining such of the measurements given by Sergi as are comparable with those taken by myself on the living. Even a cursory glance at the following table shows that the Tigre stand closer to the Hadendoa than to the Beni Amer, and to both these Beja tribes than to the longer-headed Kababish whose H.B. and F.B. are both slightly in excess of those of the Beni Amer.⁴

¹ Elliot Smith, *The People of Egypt* (Address to Cairo Scientific Society, 1900), p. 8.

² *Op. cit.*, p. 13. The C.I. for the males (69) including apparently four immature subjects is 74.2, for the females (25) 74.1.

³ Letter from Schweinfurth to the Berlin Anthropological Society transcribed by Sergi, *op. cit.*, pp. 1 and 2.

⁴ The Kababish are a nomad Arab tribe, *cf. infra*, p. 627 *et seq.* It may be suggested that

| | | | H.L. | H.B. | F.B. |
|----------------|-----|-----|--------|--------|-------------|
| Beni Amer (51) | ... | ... | 183.4 | 133.7 | 120.84 |
| Tigre (65) | ... | ... | 183.6 | 136.2 | 125 (42) |
| Hadendoa (54) | ... | ... | 182.9 | 136.6 | 122 |
| Kababish (24) | ... | ... | 186.91 | 135.36 | 123.7 |

The facial (bizygomatic) breadth has been included because this measurement is taken between two definite subcutaneous bony arches over which the skin does not tend to roll, so that if the average thickness of the cutaneous tissues were known and a correction applied the figures obtained would probably be as reliable as those for head length and head breadth. In the table the H.L. and H.B. of the living have been reduced by 7 and 8.5 mm. respectively, and the F.B. by 7 mm.,¹ in order to make them comparable with the measurements taken on the Tigre skulls. I have not ventured to make use of the facial or upper facial lengths on account of the much greater difficulty in taking these measurements on the living.

Summing up the information given in the tables and collating it with what has been said of the biological characters of the skulls and heads of the peoples under consideration it may be stated:—

- (i) In their biological characters the heads of Beni Amer and Hadendoa are essentially similar, both closely resembling those of the proto-Egyptians and some of the less modified stocks which have arisen by the action of foreign influence upon them. But while the crania of Beni Amer and Hadendoa are so nearly alike in length that they may be said to be identical in this respect, they show a difference in breadth sufficient to raise the cephalic index of the Hadendoa by nearly two units. Judging by their skulls the Tigre of Abyssinia, though they speak the same language as the Beni Amer, are less nearly related to them than to the Hadendoa.

the increased facial breadth of the Tigre, Hadendoa, and Kababish is due to the greater amount of foreign blood (Armenoid and Negro) in these tribes.

¹ The corrections for H.L. and H.B. are those given by Elliot Smith (p. 606, footnote), that for F.B. is suggested by the figures quoted by H. von Eggeling in *Physiognomie und Schädel* (Jena, 1911). The author gives the average thickness of the soft tissues over the highest point of the zygoma of twenty-one well-nourished male Europeans (presumably Germans) as 4.33 mm. I should expect a rather smaller figure for the Beja and kindred peoples, and have accordingly subtracted 7 mm. from the average of the measurements taken on the living.

- (ii) While the noses of the two peoples scarcely differ in length and breadth they are different in character in a large number, perhaps in a majority, of individuals.
- (iii) The Hadendoa are considerably taller than the Beni Amer, they certainly show more foreign (presumably northern Armenoid) influence than the latter, and probably more Negro influence.
- (iv) The genetic relationship that all these facts imply is confirmed in a remarkable way by measurements.

The Beni Amer, the most dolichocephalic of modern Beja, stand very close to the earliest predynastic Egyptians and the Nubians of Groups A (early dynastic) and C (Middle Nubian). In skull breadth the measurements are so close that they may be taken as identical. The increased breadth which distinguishes the Hadendoa from the Beni Amer and which, judging from Chantre's indices, is carried still further in the Bisharin (C.I. 79), is paralleled by the considerable increase in breadth, with only slight and inconstant increase in length, which occurs in Egypt in passing from early predynastic (H.B. 131.5) and late predynastic (H.B. 133.5) through Naqada (H.B. 134.87) to the Old Kingdom (Giza skulls H.B. 139.02¹) and the Middle Kingdom (Naga-ed-Deir skulls H.B. 138.9²).

It seems therefore legitimate to conclude that the Beja are essentially similar to the old proto-Egyptians and that they represent this stock to-day, its least modified members being the Beni Amer, while the rise in head breadth in the Hadendoa and Bisharin is due to the influence of the same relatively round-headed race that increased the breadth of the skulls of the proto-Egyptians. The increase in stature of the Hadendoa, and to a less extent of the Bisharin, is doubtless owing to this same influence, but it is possible that it may be due in part to Negro (Nilotic) influence.

The Barabra.

The origin of the inhabitants of Nubia, the Barabra or Berberines, is by no means clear. Perhaps this is in part due to the confusion introduced into the problem by Frederick Müller and Keane, who have insisted on applying linguistic criteria to determine the ethnological position of the Barabra. Müller erected a Nuba-Fulah group of languages to include the Barabra dialects and Fulah. Keane rejected this view, almost with scorn, but, on account of similarities in the language, or some of the languages, spoken in Northern and Central Kordofan to those spoken by the Barabra, did not hesitate to proclaim the essential unity of the Barabra and the tall black Negro hillmen of Kordofan, in spite of the fact that Lepsius, who has

¹ From measurements on material in the Cairo School of Medicine dating from the fourth to the sixth dynasties, quoted by Elliot Smith and Wood Jones in the *Archaeological Survey of Nubia* (1907-1908), vol. ii, p. 27.

² Elliot Smith and Derry, *Archaeological Survey of Nubia*, Bulletin No. 6, p. 20.

made an exhaustive study of the Berberine dialects, traces the Barabra to the Wawat, a people mentioned over and over again in records dating from the time of the Pyramid-builders to that of the Ptolemies. The confusion may have been increased by the similarity of the names Nuba and Nubia.¹ In any case it is not difficult, in the light of fuller knowledge of the Nuba themselves and of the history of Kordofan, to explain the similarities in language which misled Keane. A much greater difficulty which must be faced is the repeated reference on the Egyptian monuments to Negroes in Nubia at a time when, as shown by the excavations conducted by the members of the Nubian Archaeological Survey, the inhabitants of Nubia, though they may have exhibited some Negroid traits, were by no means Negroes, or even frankly Negroid. I shall return to these matters later, meanwhile a comparison of some of the indices yielded by the present-day Barabra and the Nuba of Kordofan will show at a glance how dissimilar are these two people.

| | No. | C.I. | N.I. | F.I. | Stature. |
|---------------------------------|-----|-----------------------|-----------------------|-----------------------|---------------------|
| Barabra ² | 89 | 76.59 | 80.42 | 101.58 | 1690 ³ |
| Nuba ⁴ | 82 | 76.60 (± 28) | 97.08 (± 66) | 81.72 (± 33) | 1723 (± 5) |

Although the cephalic indices are almost identical the differences in the nasal and facial indices of the two peoples are both striking and significant. These differences are borne out by a whole series of physical characters not susceptible to expression by measurement. The Nuba is stoutly built, muscular, and so dark skinned that he may be called black; the Barabra is of slight, or more commonly, medium build, not particularly muscular, and in skin colour varies from a yellowish to a chocolate brown. The hair of the Nuba is invariably woolly, that of the Barabra, though approaching the Negro in individual instances, is commonly curly or wavy, and may be almost straight, while the features of the Barabra are not uncommonly absolutely non-Negroid.

Thus, there can be no doubt that the two peoples are essentially different in physical characters, and the same holds good on the cultural side. The Barabra scar their faces in the manner common to the Beja and riverain tribes of so-called

¹ This is, e.g., probably the origin of the curious confusion in Westermann's recent book, *The Shilluk People*, in which the author speaks of Nyakang, the founder of the Shilluk nation, who came from the south or possibly the west, bringing "Nubians" with him (*op. cit.*, p. 143).

² Chantre (*Recherches Anthropologiques en Egypte*). It is to be regretted that this author has not published his figures, and that he has not always kept his measurements of the sexes distinct. Of the 89 Barabra he examined, at least 25 (probably 29) were women.

³ The stature is the average of seventy males (*op. cit.*, p. 258).

⁴ From measurements taken by myself (*cf. Journ. Roy. Anthropol. Inst.*, vol. xl, 1910, pp. 505-524) and by Dr. C. S. Myers (*ibid.*, pp. 141-163).

"Arabs"; they circumcize their youths and mutilate their girls,¹ but they do not cover the bodies of their women with cicatrices, neither do they remove their incisor teeth, nor do their women perforate the lower lip in order to wear a lip ornament. The Nuba do not circumcize their boys or mutilate their girls, but do practise the remaining deformations mentioned in the last sentence. Both make pottery, but the technique employed and results attained are utterly different, indeed, the Barabra pottery still strikingly resembles the Egyptian, and there is the clearest evidence that the predynastic tradition in pottery continued in full swing as late as the eighteenth dynasty in Upper Egypt and Nubia.

This brings us to the greatest difficulty experienced in placing the Barabra, namely, the historical; the nature of the difficulty will be appreciated by a brief statement of the data which it is necessary to consider.

The recent excavations above Aswan, conducted by the members of the Archaeological Survey of Nubia, show that long ago Nubia was inhabited by a people who buried in the same way as the predynastic Egyptians, while the pottery indicates that some at least of these people had a technique closely resembling, though not identical with, that of the prehistoric Egyptians.² Other graves contain series of objects identical in material and manufacture with the contents of predynastic graves in Egypt. Further, on physical grounds, Professor Elliot Smith has identified these early inhabitants of Nubia (Group A) with the prehistoric Egyptians. These facts strongly suggest, but do not prove, that the Nubians of Group A and the predynastic Egyptians were contemporaneous; this is made certain, however, by the discovery of typical late predynastic objects of the finest technique and greatest value in early Nubian graves.

Specimens such as the double-bird slate palettes and magnificent gold handled mace recently found in a Nubian grave³ bear out early traditions of contact between the two peoples such as that implied by the legend that Horus passed into Nubia after conquering Set and there won a great victory.

Again, in the first dynasty, the Palermo Stone records the smiting of a people called the Troglodytes at Elephantine. No doubt the contact between the two peoples increased, and, according to a Ptolemaic tradition, Zoser, the founder of the third dynasty, so controlled the region of the cataract that he could grant to "Khnum the god of the cataract at least nominal possession of both sides of the river from Elephantine . . . to Takompo," some 75 or 80 miles above the cataract.⁴ Yet in the times of the Pyramid-builders the Nubians were sufficiently un-Egyptian to be treated as foreigners to be raided without mercy, and it is recorded in the third dynasty that Sneferu brought back from his Nubian campaign

¹ For the significance of the mutilation of girls and cheek-scars *cf. infra*, pp. 639 and 640.

² I am greatly indebted to Mr. C. M. Firth for showing me the specimens in question, I particularly remember one delicately made bowl with a buff coloured body upon which a number of animals were painted in bright red.

³ This mace has been figured by Mr. Firth in *The Archaeological Survey of Nubia*, Bulletin No. 7, 1911, p. 18.

⁴ Breasted, *History of Egypt*, p. 112.

7,000 living prisoners and 200,000 large and small cattle.¹ Booty of this description could have been obtained only from a land such as Nubia if Sneferu and his generals "eat up" the country as Chaka's Zulu "eat up" the surrounding peoples. Further, the spoil carried off indicates that Nubia was inhabited by a more or less settled semi-pastoral people who grew catch crops on every inch of cultivable land, so Sneferu's record gives us valuable information concerning the condition of the Nubians during the Old Kingdom.²

In the sixth dynasty raids into Nubia alternate with armed trading expeditions. Yam, Kau, Temeh, Irthet, Mazoi, and Wawat³ occur as names of places in Nubia and the chiefs of the three last did homage to King Merenra on his visit to the First Cataract.⁴

In this reign Una, an old and tried servant of the royal family, visited the First Cataract with only one war-boat. This is mentioned as a unique occurrence.⁵ During a later expedition which lasted a year, the chiefs of Irthet, Wawat, Yam, and Mazoi brought timber to Una with which he built boats.⁶ In the same reign Harkhuf, a governor of the South, was sent to "explore a road" to Yam; no mention is made of fighting. A second expedition sent to Irthet, Mekher and Tereres returned in eight months laden with gifts. Once more Harkhuf went to Yam and found the "chief of Yam going to the land of Temeh as far as the western corner of heaven. I went forth after him to the land of Temeh and I pacified him, until he praised all the gods for the king's sake."⁷ After this vigorous co-operation with Yam the Egyptians traversed the land of Yam to Irthet and returned through Sethu and Wawat on the eastern bank, everywhere leaving the tribes at peace and reaching Egypt with 300 asses laden with incense, ebony, *heknu*, [oil], grain, panther skins, ivory, throwing-sticks, and "every good product."⁸ All

¹ Palermo Stone, cf. Breasted, *Ancient Records*, I, 146.

² This suggestion is confirmed by information given me by Professor Petrie, namely, that bags of bran, i.e., pillows stuffed with bran, have been found in predynastic tombs. The condition of the people may well have been somewhat similar to that of the Nilotic tribes of the present day, a people predominantly pastoral and depending largely on milk for food, yet growing a certain amount of grain to make beer and to provide food for themselves, but except in unusually favourable seasons never producing enough to last them the year through without times of scarcity, which in bad seasons, when there is little food for the cattle, become periods of want or of actual famine.

³ Irthet has been identified by Maspero as the region from Derr to Dongola, or Upper Nubia on the west, Yam is between Irthet and Aswan or Lower Nubia on the west side, and Wawat is opposite Yam on the east (Petrie, *History of Egypt*, I, p. 94). The journey to Yam and back occupied seven months.

⁴ A stele on the rock at Aswan records this, the inscription runs: "The coming of the king himself appearing behind the hill-country that he might see that which is in the hill-country, while the chiefs of Mazoi, Irthet, and Wawat did obeisance and gave great praise." Breasted, *Ancient Records*, I, 318.

⁵ Breasted, *Ancient Records*, I, 322.

⁶ *Ibid.*, I, 324.

⁷ *Ibid.*, I, 333-335.

⁸ *Ibid.*, I, 336.

this trade so impressed the chief of Irthet, Sethu, and Wawat, that he presented bulls and small cattle.¹

Under Pepi II., Pepi-nekht, who was sent on a campaign against Wawat and Irthet, returned victorious with many living prisoners. He was sent again "to pacify these countries" and brought back the two chiefs of Wawat and Irthet and their children with many bulls.² Later in the same reign Sebni journeyed south to fetch the body of his father Mekhu who had died in or beyond Wawat. He has recorded that he went at the head of "a troop of my estate and 100 asses . . . bearing ointment, honey, clothing, oil . . . in order to make presents in these countries." Sebni returned from Wawat and Irthet with his father's body and with incense, clothing, ivory (one tusk 6 cubits long), hides and "all kinds of gifts from these countries."³

These and other records seem to show that towards the end of the Old Kingdom Egypt exercised at least so much control over Lower Nubia that much of the country could be safely traversed by small military parties and by strong caravans. Nevertheless an enduring peace was not established throughout the length and breadth of the land and local difficulties led to the despatch of more than one punitive expedition.

In connection with the Pyramid-builders' expeditions it may be significant that it is about the time of the third dynasty that the bones of the Nubians then living above Aswan begin to show definite evidence of Negro admixture.⁴ This influx from the south can only have been helped by Sneferu's wasting of the country, so that from the third dynasty onwards the population that grew up was a mixture of early Nubian and dynastic Egyptian with an ever-increasing Negro element. During the time that this mixed population was fusing into a more or less common progressively darker type "the people of Nubia buried their dead in graves which, on archaeological evidence, are quite distinct from those of the Egyptians of the same and, in fact, every other period."⁵

From the end of the sixth to the establishment of the eleventh dynasty little is known of Egyptian history. It was a time when domestic strife took the place of foreign aggression, the garrisons of the south, if such existed, were withdrawn, and Egyptian influence waned south of the cataract. The result may have been that the country was left in an impoverished condition with a reduced population in an unsettled state.

No doubt during this period the wilder tribes south of the Second Cataract not only continued independent, but exerted pressure on their northern neighbours, who would be driven into Lower Nubia, perhaps even into Upper Egypt.⁶

¹ *Loc. cit.*

² *Ibid.*, I, 358 and 359.

³ *Ibid.*, I, 366-369.

⁴ *Archaeological Survey of Nubia*, Bulletin III, p. 22.

⁵ *Ibid.*, p. 24.

⁶ More or less steady pressure from the south must be assumed in order to account for the innumerable revolts in Nubia which occurred from the twelfth to the eighteenth dynasty, whenever the Pharaoh was strong enough to be concerned with the happenings south of the

During these centuries the process of fusion of Egyptian and Negro elements continued "until the new hybrid population assumed the remarkably homogeneous blend of Egyptian and Negro traits which characterize the Middle Nubian people,"¹ a type which, according to Elliot Smith, "seems to have remained dominant in Nubia ever since then, for the span of almost 4,000 years, which separates the Middle Empire from the present."²

As far as we know the eleventh dynasty did not pay much attention to the situation in the south, though there is a mention of "ships to Wawat,"³ but in the twelfth dynasty Nubia is once more the subject of many inscriptions. That vigorous ruler Amenemhat I. has left the record "I seized the people of Wawat, I captured the people of Mazoi."⁴

There is an inscription at Wadi Halfa, dating from the time of Senusert I., referring to the capture of ten towns in the neighbourhood of the Second Cataract the grain taken being thrown into the river.⁵ Ameni, the hereditary prince of the Oryx nome, led an expedition into Nubia, "I passed Kush sailing southwards, I advanced the boundary of the land, I brought all gifts; . . . Then his majesty returned in safety having overthrown his enemies in Kush the vile. I returned, following him, . . . There was no loss among my soldiers."⁶ Ameni made several expeditions southward for gold and ore, sometimes with 600, sometimes with 400, troops and always returned with soldiers uninjured, so that these journeys may have been trading expeditions.⁷ In the next reign, that of Amenemhat II., one Sa-Hathor worked gold mines in Nubia and forced the local chiefs to wash gold for him.⁸

Senusert III. conducted four campaigns in Nubia, between the First and Second Cataracts. He canalized the Great Cataract to allow boats to pass rapidly and fortified Kummeḥ and Semneh, setting up a boundary stele 37 miles south of Wadi Halfa, beyond which no Negro might come except as a trader.⁹ In his sixteenth regnal year he "captured their women, . . . carried off their subjects, went

cataract. Indeed, it is difficult to imagine other conditions which could necessitate ever recurring expeditions to suppress rebellions in a narrow strip of country traversed by a great river.

¹ *Archæological Survey of Nubia*, Bulletin III, p. 25. Professor Elliot Smith applies the term "Middle Nubian" to the bodies and graves of the time of the Middle Empire (Dynasties XII-XVII). The archaeologist (Dr. Reissner) speaks of these bodies and graves as constituting the C Group.

² *Op. cit.*, p. 26.

³ *Ibid.*, I, 483.

⁴ *Ibid.*, I, 519.

⁵ *Ibid.*, I, 602.

⁶ *Ibid.*, I, 426.

⁷ *Ibid.*, I, 512.

⁸ *Ibid.*, I, 520-521.

⁹ The decree on the stele runs thus: "Southern boundary, made in the year 8, under the majesty of the King of Upper and Lower Egypt, Khékure (Sesostris III.) who is given life for ever and ever; in order to prevent that any Negro should cross it, by water or by land, with a ship, (or) any herds of the Negroes; except a Negro who shall come to do trading in Iken or with a commission. Every good thing shall be done with them, but without allowing a ship of the Negroes to pass by Heh, going downstream, for ever." Breasted, *Ancient Records*, I, 852.

forth to their wells, smote their bulls; . . . reaped their grain, and set fire thereto."¹ Another campaign is recorded in the nineteenth year of his reign when he overthrew "the wretched Kush."²

The rude character of some of the pottery which, according to Mr. Firth, is contemporary with the twelfth dynasty, suggests that the people who made this were well tintured with Negro blood. But however much the kingdom expanded under the great rulers of the twelfth dynasty at its close there was again a dark period. It seems likely that at this time some such process of withdrawal took place as that which may have occurred at the end of the Old Kingdom, though perhaps not so complete, followed by an incursion of more Negroid tribes from the south, and this would account for the princes of the New Empire having to conquer Nubia or at least Upper Nubia once more.

In the reign of Aahmes I. a campaign against the Nubian Troglodytes is recorded.³ Amenhotep I. "ascended the river to Kush. . . . His Majesty captured that Nubian Troglodyte in the midst of his army"⁴ and in this reign Hormini "attained old age in Wawat" as governor of that country and went north each year with its tribute for the King.⁵ From this it seems that it was at last recognized that the old policy of raids and punitive expeditions was inadequate to ensure peace on the southern border, and that the only thing to do was to arrange for the administration of the country.

Under Thotmes I. the boundary was extended southwards to the Third Cataract. "He hath overthrown the chief of the Nubians, the Negro is helpless, defenceless in his grasp. . . . There is not a remnant among the curly-haired, who came to attack him; there is not a single survivor among them."⁶ The king returned to Egypt bringing back "that wretched Nubian Troglodyte being hanged head downwards" at the prow of the royal barge.⁷ In spite of the forward policy of this prince the Nubians seem to have considered that the youth and inexperience of his successor offered a favourable opportunity to revolt, for in an inscription near Aswan dated in the first year of Thothmes II., it is recorded that "The wretched Kush has begun to rebel, those who were under the dominion of the Lord of the Two Lands purpose hostility, beginning to smite him. . . . His majesty was furious thereat like a panther, when he heard it. Said his majesty, "I swear, as Re loves me, as my father, lord of gods, Amon, Lord of Thebes, favors me, I will not let live anyone among their males. . . . Then his majesty despatched a numerous army into Nubia. . . . This army of his majesty overthrew those barbarians; they did [not] let live anyone among their males, according to all the command of his majesty, except one of those children of the chief of wretched Kush, was taken away alive as a living prisoner with their people to his majesty. They were placed under the feet of the Good God. . . . This land was made a

¹ *Ibid.*, I, 658.

² *Ibid.*, II, 14.

³ *Ibid.*, II, 48.

⁴ *Ibid.*, II, 80.

⁵ *Ibid.*, I, 672.

⁶ *Ibid.*, II, 39.

⁷ *Ibid.*, II, 71.

subject of his majesty as formerly, the people rejoiced . . . they gave praise to the Lord of the Two Lands, they lauded this god excellent in examples of his divinity."¹

Under Thothmes III. the contact with Nubia becomes more intimate, there is an inscription at Semneh describing offerings of grain and cattle to be made by local chiefs and governors to Dedun, a god of Nubia, at certain annual festivals.² At the same time the children of Nubian chiefs appear as slaves in the temple of Karnak, and a large tribute was exacted yearly.³ In spite, or perhaps because, of this a campaign against Nubia was necessary in the fiftieth year of the reign; the names of seventeen towns or districts conquered are given, all their inhabitants being carried away captive and "all their herds being led to Egypt."⁴ A revolt in Nubia was again suppressed under Thothmes IV.,⁵ and his successor, Amenhotep III., after a campaign in Nubia in the fifth and sixth years of his reign, brought back to Egypt over 700 prisoners and the hands of more than 300 dead.⁶

A revolt of the usual character forced Harmhab, the founder of the nineteenth dynasty, to lead an expedition into Nubia⁷ and there is an inscription in a temple at Wadi Halfa recording that Rameses I. added "slaves of the captivity of his majesty" to the endowment of the temple.⁸ There were unimportant revolts in Nubia under Rameses II., but these must have been in the far south,⁹ the great rock temple at Abu Simbal, where Rameses was himself worshipped, shows how completely the country had come under Egyptian influence. Here "the old native chiefs had practically disappeared, the administrative officials were in complete control, and there was even an Egyptian court of justice with the viceroy as chief judge,"¹⁰ indeed, before this, towards the end of the eighteenth dynasty, Egyptian authority had been established as far south as the Fourth Cataract.¹¹ Egyptian influence had conquered, the process of absorption begun by Senusert III. when he gave the first place to the Nubian god Dedun in his temple at Semneh was complete by the end of the eighteenth dynasty, and a wall painting indicates that the majority of the Nubians who accompanied their governor Huy when he brought the tribute of the southern countries to his master, the king Tutenkhamon, have in clothes and coiffure done their best to show how thoroughly they have adopted the superior civilization.¹²

We have no representations of the Nubians until the eighteenth dynasty, from which time until the twentieth dynasty they are drawn and painted in innumerable scenes, appearing as full-blooded Negroes with coarse Negro features even when, for the sake of definition, the nearer of two blacks moving side by side is represented of a brown colour. It seems impossible to evade these many representations, or to

¹ *Ibid.*, II, 121, 122.

² *Ibid.*, II, 162.

³ *Ibid.*, II, 826-829.

⁴ *Ibid.*, III, 40-44.

⁵ *Ibid.*, III, 450-453.

⁶ Erman, *Life in Ancient Egypt*, p. 504.

⁷ *Ibid.*, II, 170, 171.

⁸ *Ibid.*, II, 645.

⁹ *Ibid.*, II, 853-854.

¹⁰ *Ibid.*, III, 78.

¹¹ Breasted, *History of Egypt*, p. 446.

¹² Lapsius, *Denkmäler*, III, 117.

read into them any other significance than the obvious one, that the Nubians conquered by the great kings of the New Empire were Negroes in the broad common sense of the term. Further, although I have been able to find no twelfth dynasty representations of Negroes, *nehesi*, the word used by Senusert III. in his celebrated decree, though strictly meaning an inhabitant of the land of Nehes, is commonly used for Negro in the inscriptions of the New Empire. Thus in the inscription of Thothmes I. "The Negro is helpless, etc.," already referred to, the word translated Negro is *nehesi*, while of the captives taken by Amenhotep III. (*supra*, p. 617) the word translated "Negresses" is *nehesyt*, the fem. pl. of *nehesi*, and "servants of the Negroes" is written "servants of the *nehesi*."¹ Moreover, there is no doubt that even in early times Nehes signified the land to the south of Egypt. The earliest mention of Nehes is on the Palermo Stone in Sneferu's reign, though the prisoners of Sneferu are not said to come definitely from Nehes.² Pepi I. (sixth dynasty) made war against the Yrthet-*nehesi*, the Maza-*nehesi*, the Yam-*nehesi*, the *nehesi* of Wawat, the *nehesi* of Kau, and the *nehesi* of Temeh.³ Under his successor, Pepi II, Sebni goes to the lands which Breasted translates as "countries of the Negroes,"⁴ i.e., *nehes*.

With regard to the word in the inscription of Thothmes I. (*supra*, p. 616) rendered "the curly-haired," i.e., as a synonym of "Negro" (*nehesi*), written earlier in the inscription, and which seems at once to settle the question of the significance of *Nehe*si, it is necessary to exercise a certain amount of caution, for Miss Murray points out that this word reads *nebed*, and is determined by a lock of hair, i.e., "the curly-haired" stands for "the *nebed*-haired." But *nebed*, according to Brugsch, does not mean "curly" but is the equivalent of the French *tresser*, *natter*, *entrelacer*, and is akin to the Coptic **ⲙⲟⲩⲉⲧ** = *plectere*, *intexere*.⁵ Perhaps *nebed*-haired may be translated "with hair in plaits," if so it still bears out the Negroid character of the folk to whom it was applied, for many Negroes and Negroids do their hair in a mass of small plaits.

Yet, as pointed out on p. 615, the results of excavations north of Aswan show that from the twelfth dynasty onwards the population was a hybrid one; the C Group skulls, though Negroid, were certainly not Negro, indeed, as already stated, Elliot Smith considers that making allowance for newer alien [Armenoid] influence from the north, the C Group type is roughly the same as that exhibited by the inhabitants of Nubia at the present day.⁶ I do not think that anyone will seriously

¹ I am indebted to Mr. Guy Brunton for making a careful copy of the original of this inscription, which I understand is difficult to read. Numerous other examples could be given but these have been selected as being among the most convincing.

² The inscription reads: "Hacking up the land of Nehes. Bringing of 7,000 living prisoners."

³ Mariette, *Abydos*, II, 44.

⁴ Breasted *Ancient Records*, I, 366. Sethe, *Urkunden*, I, 136.

⁵ Brugsch, *Wörterbuch*, 752. Peyron, *Lexicon Copticum*, 128.

⁶ Without going into the physical anthropology of the Barabra in detail I may point out that the bulging occiput, which is a common feature in proto-Egyptian skulls and the heads

challenge this broad conclusion, yet in view of the many representations of undoubted Negroes from Nubia dating from the eighteenth to the twentieth dynasty it is difficult to see how it can be accepted in the form put forward by Elliot Smith, namely, that the Group C type "has remained dominant in Nubia ever since," i.e., since the time of the Middle Kingdom.

A possible solution suggests itself, though it does not seem to me satisfactory. It might be held that the comparatively slight difference in geographical position between the country immediately south of Aswan and in the neighbourhood of the Second Cataract, suffices to account for the difference existing between the skeletons of the Middle Nubians and the nearly contemporary representations of Nubians from south of the Second Cataract. But it seems that this solution has so much against it that it may be allowed to drop; apart from its *prima facie* improbability, and the constant pressure which was exerted from the south, its inadequacy is indicated by the use of the same term (*nehes*) for Nubians by Senusert III. (who after much fighting fixed his boundary at the Second Cataract) and by his successors, who depicted the dark-skinned opponents they overcame in pushing their confines further south.

How then can the similarity of the Nubian population of the time of the Middle Kingdom and beginning of the New Empire to that of the present day be explained, while yet taking account of the Negro population existing under the New Empire? It seems that only one explanation is tenable, namely, that for a period subsequent to the Middle Kingdom the country in the neighbourhood of the Second Cataract became essentially a Negro country and may have remained in this condition for some little time. Then a movement in the opposite direction set in, the Negroes, diminished by war, were in part driven back by the great conquerors of the New Empire, those that were left mixed with the Egyptian garrisons and traders and once more a hybrid race arose which, however, preserved the language of its Negro ancestors.

Perhaps in course of time and under the influence of increased pressure from the north this race gave rise directly to the present-day inhabitants of Nubia, the Barabra, but such a conclusion is at least premature; it is highly probable that the Beja nomads of the eastern desert may have contributed not a little to the lightening of the hybrid Egyptian-Nubian race, just as in both Lower and Upper Egypt the Ababdeh have intermarried with the Fellahin so that not only are there Fellahin in whom recent Beja blood may be traced, but there are actually settlements of people of mixed blood who call themselves Ababdeh.

In support of this suggestion and as indicating that something of the sort has taken place in recent times it may be mentioned that among the Danagla there is a division called Gel Nas, which is said to be short for Nas el-Ghazal, because

of the modern Beja (*supra*, p. 605), also occurs among the Barabra and is quite obvious in two of the photographs reproduced in Plate XXXV. The man shown in Fig. 8, with his long skull, bulging occiput, and pointed chin, seems to reproduce a number of the more salient characters of the proto-Egyptians.

they came in from the desert. Moreover, among both Danagla and Mahas the names of many divisions end in *-ab*, a suffix equivalent to "sons of" or "people of" in the Hamitic dialects of the Eastern Desert.¹

Lastly, with regard to the language, if the language of the southern Nuba be compared with the dialects (Mahass, Sukkhot, etc.) spoken by the Barabra it will be found that there is no resemblance. The inhabitants of the *jibal* in Southern Kordofan, but situated a little north of the Bahr el-Ghazal, have a language, or rather a series of languages, with grammatical structure and vocabularies which do not resemble the Berberine dialects. The communities of some of these hills are as yet unaffected by northern influence as is shown by the fact that the men still go absolutely naked and uncircumcized, the very first result of Arab (Mohammedan) influence being the adoption of circumcision and the assumption of at least a minimum of clothing. The resemblances found between the languages of the Barabra and of the Nuba of Northern Kordofan are in fact due to foreign influence, to which the hillmen have been submitted for a considerable period. It has long been known that the southern Barabra of Dongola Province are keen traders, indeed, the traveller in Kordofan soon comes to recognize that these folk have exerted a sustained and increasing influence for a considerable time. As might be expected this influence is most marked in the north, where important settlements of Barabra have long existed, but there is not the least doubt that it has penetrated to a degree not commonly realized deep into the heart of Kordofan, and it is this pacific and mercantile penetration which, in my opinion, must be held responsible for the similarities that have been discovered in the Berberine and Nuba languages.

In support of this view, which as far as I know has not been put forward before, I would draw attention to the following extracts from Mr. H. A. MacMichael's recent work upon the tribes of Northern Kordofan. It must be remembered that the author is concerned with the history of the more important tribes of the province, not with the peaceful penetration of communities of traders, so that the following passages are of additional weight as showing the influence exerted on the former by the immigrant Barabra.

The oldest reference given by MacMichael is from El Tunisi, to the effect that Hashim, whom he describes as the "most powerful man in Northern and Central Kordofan," collected an army of 10,000 men, chiefly Danagla, Shaigia, Kababish, and Rizeigat, to invade Darfur.² This was about 1784-5; Hashim was driven to Sennar by Tirab of Darfur, and MacMichael, in his account of Tirab's victorious return, notes, "It was at this time too that Bára, built originally by Danagla, was beautified with trees and gardens."³

The next mention of the Danagla appears to be by Ruppell who, writing in 1829, says that the inhabitants of the *jibal* Haraza, Um Durrág, and Abu Hadid are

¹ Thus Sornab and Hakmab among the Danagla, and Hassanab, Sukarab, Kamlab, Deshab, etc., among the Mahas.

² *The Tribes of Northern and Central Kordofan*, pp. 13 and 14.

³ *Op. cit.*, p. 15.

a mixture of Nuba and Dongolawi.¹ The account of El Obeid as it existed in 1838-9, given by Pallmé, states that after the Turks took the place they rebuilt it in six portions, one of which was set apart for the Danagla and other foreign merchants.² The former were *protégés* of the Turks, and largely employed by them in the administration. Practically all the export trade was in their hands, and they also traded for slaves and ivory with the southern mountains. Besides these Danagla were commonly appointed paramount sheykhs (*sheykh el mashaikh*) of districts, and when this office was abolished the *nazir* who took their place were still often Danagla.³

The evidence of the inhabitants of Jebel Midob, a *massif* of considerable size in the territory of the Sultan of Darfur several days' journey west of the Kordofan-Darfur border, is particularly convincing. These folk say that they are the descendants of an ancient colony of Mahass and Danagla who travelled westwards from the Nile. Some of them told Mr. MacMichael that their fellows who had visited the river found that their language greatly resembled the Mahass and Danagla dialects and instanced the word *kosi*, meaning a wooden food bowl, "in the tongue of Midób and of the old inhabitants of Dongola."⁴

It seems, then, that there can be no doubt as to the widely spread influence exerted by the Danagla; except in the extreme south, they went all over Kordofan as traders, settled as cultivators and took so many Nuba women to wife that it is scarcely an exaggeration to say that local small mixed races were produced. It is surely this immigration which has led to those likenesses to the Berberine dialects which exist in vocabularies obtained from the hillmen of Northern and Middle Dar Nuba.⁵

In 1910 Mrs. Seligmann collected vocabularies and obtained a certain amount of grammatical information concerning the languages spoken by seven communities in Southern Dar Nuba, viz., Talodi, Lafafa, Eliri, Tumtum, Kanderma, and Kawama.⁶

¹ Quoted by MacMichael, *op. cit.*, p. 86, footnote. Writing of Jebel Tubr at the present day MacMichael says (*op. cit.*, p. 101), "The Nuba of Abu Tubr contain some elements of the same Dongolawi blood as is found at El Haráza."

² *Travels in Kordofan*, p. 258 (London, 1844).

³ MacMichael, *op. cit.*, p. 34.

⁴ MacMichael, *op. cit.*, p. 103.

⁵ Dar Nuba at the present day may be taken to extend over $2\frac{1}{2}^{\circ}$ of latitude from $12\frac{1}{2}^{\circ}$ N. to 10° N. North of 12° foreign influence is pronounced, even in Bruce's time Jebel Tegele and Jebel Daier had been alternately overrun from Darfur and Sennar and had furnished a garrison to the latter province, or kingdom as it then was. Mrs. Seligmann's material was collected from the hills south of the eleventh parallel which, except in the case of a group (comprising the *jibal* Fungor, Nyaro, Kau, Werna, and Gedir) lying west of Melut on the White Nile, have been little subjected to foreign influence. The inhabitants of the hills lying between the eleventh and twelfth parallels, though less sophisticated than their northern neighbours, are by no means as unaffected as the hillmen further south. It is probable that this middle zone will yield more material of cultural and linguistic interest than any other part of Kordofan. I have been told that vocabularies collected in this area contain words similar to those found in Barabra, and it seems possible that even grammatical resemblances may be found.

⁶ "Note on the Languages of the Nubas of Southern Kordofan" in *Zeitschrift für Kolonial-sprachen*, vol. I, pp. 167-188 (Berlin, 1910-1911).

| | Lafofa. | Kauderna. | Kawama. | Jebel Dater. ¹ | Koldadji ² (Russaggor). | Barabra. ³ | Barabra (Lepsius). |
|----------|-------------------------------------|------------------------------|---|-----------------------------------|------------------------------------|----------------------------|--------------------|
| One | ... <i>dilili</i> ... | ... <i>kené</i> ... | ... <i>wéptáru</i> ... | ... <i>bér</i> ... | ... <i>ber</i> ... | ... <i>véra</i> ... | ... <i>ber.</i> |
| Two | ... <i>batéran</i> ... | ... <i>kérécén</i> ... | ... <i>uten</i> ... | ... <i>orré</i> ... | ... <i>ora</i> ... | ... <i>áo</i> ... | ... <i>orré.</i> |
| Three | ... <i>batádan</i> ... | ... <i>kérécén</i> ... | ... <i>tolé</i> ... | ... <i>tođu</i> ... | ... <i>tođu</i> ... | ... <i>tsako</i> ... | ... <i>tođu.</i> |
| Four | ... <i>kéka</i> ... | ... <i>malu</i> ... | ... <i>kuora</i> ... | ... <i>kendjo, kemonjo</i> ... | ... <i>kézo</i> ... | ... <i>kézo</i> ... | ... <i>kénjo.</i> |
| Five | ... <i>grégum</i> ... | ... <i>théné</i> ... | ... <i>toléne</i> ... | ... <i>tsaku</i> ... | ... <i>tsau</i> ... | ... <i>dija</i> ... | ... <i>tsau.</i> |
| Six | ... <i>diledidenit</i> ... | ... <i>récécén</i> ... | ... <i>nérghal</i> ... | ... <i>kordjé</i> ... | ... <i>farzo</i> ... | ... <i>górjo</i> ... | ... <i>korje.</i> |
| Seven | ... <i>batéran didenit</i> ... | ... <i>maláčiin</i> ... | ... <i>kuritori</i> ... | ... <i>kolatt</i> ... | ... <i>fatat</i> ... | ... <i>kóléda</i> ... | ... <i>kolade.</i> |
| Eight | ... <i>batádan didenit</i> ... | ... <i>ébo</i> ... | ... <i>dubo</i> ... | ... <i>idala</i> ... | ... <i>ébo</i> ... | ... <i>idawo</i> ... | ... <i>ébo.</i> |
| Nine | ... <i>kéka didenit</i> ... | ... <i>thénemalu</i> ... | ... <i>todénakurio</i> (<i>? todénokurio</i>) | ... <i>oit</i> ... | ... <i>wet</i> ... | ... <i>tsakoda</i> ... | ... <i>weti.</i> |
| Ten | ... <i>terum</i> ... | ... <i>ori</i> ... | ... <i>di</i> ... | ... <i>buré</i> ... | ... <i>bure</i> ... | ... <i>din</i> ... | ... <i>bure.</i> |
| Eleven | ... <i>terum diledidenit(?)</i> ... | ... <i>ori kéne</i> ... | ... <i>di nogole</i> ... | ... <i>buré berko</i> ... | ... <i>bure berkon</i> ... | ... <i>dime véra</i> ... | — |
| Twelve | ... — ... | ... <i>ori kércén</i> ... | ... <i>di uten</i> ... | ... <i>buré aré</i> ... | ... <i>bure orakon</i> ... | ... <i>dime r áwo</i> ... | — |
| Thirteen | ... — ... | — | — | ... <i>bure tudju</i> ... | ... <i>bure tojukan</i> ... | ... <i>dime t tuko</i> ... | — |
| Fourteen | ... — ... | — | — | ... <i>bure kéndjo</i> ... | ... <i>bure kéjukan</i> ... | ... <i>dime k kézo</i> ... | — |
| Twenty | ... <i>terum nia terum</i> ... | ... <i>ori na kércén</i> ... | ... <i>duriduten</i> ... | ... <i>tarbe</i> ... | ... <i>bure edukon</i> ... | ... <i>aro</i> ... | — |
| Thirty | ... — ... | — | — | ... <i>burra burra tođu</i> ... | ... <i>bure bure eddukon</i> ... | ... <i>talatina</i> ... | — |
| Forty | ... — ... | — | — | ... <i>burra burra kéndjo</i> ... | ... <i>bure bure tojukan</i> ... | ... <i>arbatina</i> ... | — |

¹ Werner Munzinger, *Ostafrikanische Studien*, p. 550.² Munzinger, *loc. cit.*³ Leo Reinsch, *Grammatik der Nuba-Sprache*, p. 34; this column gives the Mahas dialect, the words for 30 and 40 are Arabic with the additions of the suffix—*a*.

The structure of the language of these southern Nuba is altogether unlike that of the Berberine dialects; in the latter grammatical changes, both in nouns and verbs, are produced by suffixes, in the Nuba this is done by initial change. Moreover, in the latter, alliterative assonance prevails to a considerable extent, *e.g.*, the plural of *čalanga jôte* (Eliri), a good club, is *malanga môte*. Turning to vocabulary and for the moment neglecting Kawama, the most that can be said from the point of view of affinity with Barabra is that there are a few words scattered in the lists which might be connected with Nubian or Arabic. Kawama is the most northern of the languages investigated and is spoken not only on Jebel Kawama but also on Jebel Shwai and Jebel Heiban, both well north of the eleventh degree of latitude. This language shows a decided Berberine influence; the position may perhaps best be made clear by a consideration of the numerals. Talodi, Eliri, and Tumtum have special words for the first five numerals but form 6 by 5 + 1, 7 by 5 + 2, etc. This is not a Berberine characteristic, though, as pointed out to me by Mr. F. Ll. Griffith, Kawama shows a decided Berberine influence, especially in the agreement of the initial sounds in the words. The numerals given by Russegger for Koldadji (nearly 12° N.), and by Munzinger for Jebel Daier (about 12½° N.), are printed for comparison in the table opposite.

Using the numerals as a test it is obvious that there is the greatest difference between the languages spoken by the Nuba of Southern and Northern Kordofan, and we may say that whereas the former are unlike each other and do not resemble Berberine, the latter closely resemble each other and in some cases at least are identical with Berberine. Moreover, lest it should be suggested that these facts are not due to immigrant influence from the north, but to a primary division of the Nuba of Kordofan into two great linguistic groups, I may once more emphasize the multiplicity of languages found in Dar Nuba (Southern Kordofan)¹ and the fact recorded by Munzinger² that, despite Russegger's assertion, the language of Tegele in Northern Kordofan has nothing in common with the dialects of Jebel Daier and Jebel Kulfan.

Finally, reference may be made to the numerals of the people of Jebel Midob³ who, as has been stated (*supra* p. 621), regard themselves as descended, at least in part, from immigrant Barabra. From the numerals given below it will be seen that there is close resemblance not only in many of the lower numerals but also in the method of formation of the higher numerals.

| | Jebel Midob. | | | | | Barabra. |
|-------|--------------|-----|---------------|-----|-----|--------------------------------|
| One | ... | ... | <i>pirrki</i> | ... | ... | <i>icer</i> or <i>ber</i> . |
| Two | ... | ... | <i>uddi</i> | ... | ... | <i>owi</i> or <i>uwo</i> . |
| Three | ... | ... | <i>tasi</i> | ... | ... | <i>toski</i> or <i>tusko</i> . |

¹ B. Z. Seligmann, *op. cit.*, p. 168, *cf.* also Captain Watkiss Lloyd in the *Geographical Journal*, 1910, vol. xxxv, p. 262.

² *Ostafrikanischen Studien*, p. 551.

³ H. A. MacMichael, "Notes on the Zaghawa and the People of Gebel Midob," *Journ. Anthropol. Inst.*, vol. xlii, 1912, p. 339.

| | Jebel Midob. | | | Barabra. | | |
|--------------|--------------|------------------------------|-----|----------|--------------------------|--|
| Four ... | ... | <i>egi</i> | ... | ... | <i>kenisi.</i> | |
| Five ... | ... | <i>techi or dechi</i> | ... | ... | <i>digi.</i> | |
| Six ... | ... | <i>korrechi</i> | ... | ... | <i>gorgi.</i> | |
| Seven ... | ... | <i>ollotti</i> | ... | ... | <i>kolodi.</i> | |
| Eight ... | ... | <i>idi</i> | ... | ... | <i>idui.</i> | |
| Nipe ... | ... | <i>ukuddi</i> | ... | ... | <i>eskodi or oskoda.</i> | |
| Ten ... | ... | <i>timmigi</i> | ... | ... | <i>dimini.</i> | |
| Eleven ... | ... | <i>timmigëro borchirredi</i> | ... | ... | <i>dime wera.</i> | |
| Twelve ... | ... | <i>tornoddi</i> | ... | ... | <i>dime uwo.</i> | |
| Thirteen ... | ... | <i>seldasi</i> | ... | ... | <i>dime tusko.</i> | |
| Nineteen ... | ... | <i>selukoddi</i> | ... | ... | <i>dime oskoda.</i> | |
| Twenty ... | ... | <i>sheddedi</i> | ... | ... | <i>aro.</i> | |
| Thirty ... | ... | <i>tudasi</i> | ... | ... | <i>ir toski.</i> | |
| Forty ... | ... | <i>tuegi</i> | ... | ... | <i>ir kimis.</i> | |
| Fifty ... | ... | <i>tudechi</i> | ... | ... | <i>ir digi.</i> | |
| Sixty ... | ... | <i>tugorrechi</i> | ... | ... | <i>ir gorgi.</i> | |
| Ninety ... | ... | <i>tu ukoddi</i> | ... | ... | <i>ir iskodi.</i> | |
| Hundred ... | ... | <i>immil</i> | ... | ... | <i>imil.</i> | |

The fact that the Negroes who came into Nubia were in the majority of cases, perhaps always before Ptolemaic times, of the short relatively broad-headed type¹ may have some bearing on the Barabra problem. At the present day the nearest representatives of the short mesaticephalic Negro is to be found in the south of the Bahr el-Ghazal Province, in the neighbourhood of the affluents of the head waters of the Bahr el-Ghazal and the Congo, perhaps extending northwards to the head waters of the Shari affluents. Thus between these Negroes and Nubia there intervene the Dinka and allied tribes in the swamps of the Bahr el-Ghazal and White Nile, and the Nuba and Arab tribes of the steppes and *jibal* of Kordofan and the southern portion of the Libyan desert. This cannot have been the case in the third millennium B.C. when all, or almost all, the Negroes who came into Nubia were short and relatively broad headed. In other words, at the time when Nubia was exerting pressure on Egypt, the tall Nilotes, the most northern Negroes of the Nile Valley at the present time, had not occupied the area in which they are found to-day. We may indeed infer that the coming of the tall Nilotes to their present territory occurred during or later than the second millennium B.C., indeed, I believe that cultural evidence could be adduced to show that they were not in Nubia before this time. I would even suggest that it was the pressure exerted by the tall Negroes of the south that led to the centuries of fighting on the southern border of Egypt. But even if this view be regarded as fanciful there can be no doubt that in Ptolemaic times there were tall, relatively long-headed Negroes on the hills in the

¹ *Archæological Survey of Nubia*, Bulletins III, p. 27, and IV, p. 20.

neighbourhood of the Blue Nile some 150 miles south of Khartum. Mr. H. S. Wellcome, digging at Jebel Moya, has discovered one or more large cemeteries of these people whose physical characters have been described by Dr. Derry in a paper read before the Anthropological Institute.¹ Although several hundred graves were opened only a few bodies were in sufficiently good condition to allow an adequate osteological examination to be made. These, however, enabled Dr. Derry to determine that he was dealing with the remains of a tall, coarsely-built Negro race with extraordinarily massive skulls and jaws. Dr. Derry considered that in general appearance these folk resembled the coarser type of Nuba of South Kordofan, and compared them with the men (Nos. 8 and 9) shown in Plate XXXV of my paper on the Nuba² who, like the Jebel Moya skeletons, appear to have particularly large faces in relation to the size of the skull. I agree with Dr. Derry in these conclusions the more readily as I had on quite other grounds concluded that the population of the hills between the White and Blue Niles at one time closely resembled the present-day Nuba of Southern Kordofan. Moreover, there is no special reason to suppose that the black tribes who occupied the Nile Valley in the neighbourhood of the confluence of the White and Blue Niles in the eighteenth dynasty were closely akin to the Shilluk and Dinka of the present day. The fact shown in numerous contemporary paintings that they were bowmen seems to differentiate them from the Nilotes, while their use of throwing-sticks such as are still found among the Negroes living in the hills in the difficult hilly country north of the Sobat, rather suggests that the Negroes, whom Senusert III. forbade to pass his frontier and who were conquered by his successors, were akin to these and to the Nuba of Kordofan.

Nomad Arabs.

The western division of eastern tropical Africa, referred to on p. 596, is a belt of country lying between the tenth and fifteenth parallel of north latitude and stretching from the Nile into Darfur. It constitutes a vast plain dotted with steep-sided hills and rock masses which rise abruptly and reach heights varying from a few hundred to over 2,000 feet. Some of these *jibal*, such as Jebel Eliri in the south, are of considerable size, while the Tegale *massif* in the north constitutes almost a miniature range. Moderately fertile, yet but sparsely watered even in the south, the country becomes poorer and drier towards the north till beyond El Obeid there is only steppe, for the most part too poor to support a sedentary population.

¹ Dr. Derry's paper has not yet been published; the evidence for the date of these burials is the character of the objects found in the graves. These have been examined by Professor Petrie and briefly described by Mr. Wellcome in the *Proceedings of the British Association* (Section H), 1912.

² *Journ. Roy. Anthropol. Inst.*, vol. xl, 1910. As pointed out by Dr. Derry the general similarity of the two groups extends to the C.I., thus Jebel Moya ♂ (16), C.I. 76·9, and Nuba ♂ (32), C.I. 76·42. I do not wish to lay undue stress on this resemblance, but when it is remembered that the Southern Nuba are unusually tall for Negroes, averaging about 1·73 m., with a maximum of 1·90 m., it certainly seems significant.

This passes by degrees into the Bayuda Steppe and the Libyan Desert. The more habitable part of this vast area appears originally to have been the home of a race of tall muscular Negroes who, in the majority of their physical and cultural characteristics, are quite unlike the Nilotes. During the last few hundred years these people have been driven to take refuge in the hills, maintaining themselves moderately well in the south, though in the north they have been exterminated or absorbed into the mass of Negroid Arabs that forms the sedentary population of Northern Kordofan and Darfur. In short, the whole of the western division of eastern tropical Africa constitutes the headquarters of the Sudanese "Arab," and it is their tribes that must now be considered.

The Bayuda Steppe and the far north-west beyond Jebel Kaja is the home of the nomad tent-dwelling, camel-owning Arabs of whom the Kababish and the Kawahla are the two strongest tribes, but these graze and water their herds over a considerable area to the south and east, rich enough to sustain a fairly large sedentary population. Southwards, where the soil is more fertile, the camel is replaced by the ox and the land is occupied for the most part by cattle-owning tribes, collectively spoken of as Baqqara. In the extreme south, round the base of a number of the hills, there are communities of mixed Arabic-speaking blacks who call themselves Arabs, but who are almost entirely the descendants of slaves who revolted and fled from their Arab masters a few generations ago. These Negroids lack Arab enterprise and vigour, though they still speak of themselves by the names of the tribes they formerly served. Considering only the sedentary population it may be said that they become darker skinned and more Negroid from north to south, though there are exceptions to this rule. Thus the Gawama living north of El Obeid are darker and perhaps have coarser features than other tribes near them to whom they perhaps show less resemblance than they do to the Baqqara and the Negroids of Darfur.¹ No further reference need be made here to these dark-skinned inhabitants of Southern Kordofan and Darfur, since, as far as is known, they exhibit no evidence of Hamitic influence comparable in degree to that exerted upon the less Negroid population to the north.

The camel-owning nomads have a far smaller infusion of Negro blood, though the amount varies from tribe to tribe and even in different divisions of the same tribe, the richest divisions, *i.e.*, those possessing most slaves, tending to contain the highest proportion of numbers with Negro or Negroid features.² The figures given on p. 630, and the photographs reproduced on Plate XXXVII, will give some idea of the appearance of the nomad Arabs. But however much Negro blood may have modified their physique, the black element has exerted amazingly little influence on their culture and mode of life. An examination of the camp furniture of the richest division of the Kababish showed that the only distinctly

¹ Judging from the natives of Darfur met in the Sudan the mass of the folk of the Sultanate can have but little Arab blood in their veins.

² Owing to the Mohammedan law that the son of a slave or concubine takes his father's status, pronounced Negroids may be quite important members of a division. Thus, the Negroid

Negro objects which played any constant part in the life of the tribe were a number of the big wooden drums commonly called *nugara*. There were a small number of large wooden food bowls traded north from the neighbourhood of Nahud which suggested Negro influence, and a few oblong shields resembling those of the Nilotes, but few men possessed these, nor were they highly regarded. Pottery is not made by the nomad Arabs, indeed, throughout Northern Kordofan the hill Negroids (such as the Zaghawa) seem to have the monopoly of its production. Nor do the nomads make round tents or shelters, but retain the old rectangular Arab shape for even their smallest structures. The custom of the sedentary Arabs is the reverse. Even among such northern tribes as the Dar Hamid, upon whose territory the Kababish and Kawahla graze their herds, the homestead consists of a number of round *tukl*, the only reminiscence of the old rectangular tent being the flat-roofed, oblong *rekuba* forming an entrance to one of the *tukl*. It is in this *rekuba*, built usually of dry grass or dura stalks, that the master of the house lives and receives his companions.

In Northern Kordofan the life of the nomad Arabs, though pastoral like that of the Beja of the Red Sea Province, differs from the latter on account of the severity of the dry season and the organized effort that is required to meet it. The movements of families are no casual wanderings, nor are independent groups of tents to be found scattered over the country, but all movements take place *en masse*. Nothing is left to chance, no "here to-day and gone to-morrow," no tents shifted silently in the night as is so often supposed. The whole life of the tribe is regulated by the supply of grass and water for men and cattle, and it is only during the short wet season that there is a complete freedom of movement within the tribal boundaries. Thus, although the *kharif* brings its toll of fever,¹ it is the favourite season with the Kababish, for then fresh grass is to be found everywhere and water lies on the ground. The comparative discomfort of life during the rains, when all valuables must be brought into the centre of the tent under the ridge pole, when the tent must be made smaller so that the rain may run off the steep sides, and the *hegil*, or marriage tent, cannot be used, is nothing to them compared with the delight of having fresh grass for the cattle.

At the close of the wet season the sheykh of each section sends out scouts to find out where there is most water. There are certain known *fula*, slight

old man whose photograph is reproduced in Plate XXXVII, fig. 7, is the leader of one of the most important, and, as far as the paternal line goes, one of the most aristocratic sections of the Nurab division of the Kababish. And though this family is at present somewhat under a cloud on account of its adhesion to the Mahdi at a time when the old sheykh of the tribe, Salid Bey Fadlullah, remained loyal, there is a good deal of whispering and speculation as to what may happen at the death of the present sheykh. As a matter of fact the succession seems well established in the present line, and a split resulting in the formation of a new division is a great deal more likely than a change in the ruling family.

¹ Malaria seems to be by no means uncommon during and after the rains, but it does not seem to be severe and the chronic cases which came for treatment were all benign quartan. Nevertheless, it is said that a few children die each year of fever.

depressions with a clayey bottom, in which the water lies for some time, though in none of these (in Northern Kordofan) does the water last throughout the dry season, and in most of the sandy wadies the surface water disappears as soon as the rains are over. Great care must be exercised in choosing the summer quarters, so that there may be reasonable hope of sufficient water for the dry season.

The country round Showa, where the Nurab division of the Kababish formed their camp for the winter of 1911-12, is typical of Western Kordofan, a slightly undulating plain, generally sandy or stony, though in parts rocky and covered with coarse grass and thorny *kitr* bush. Low ranges of rocky hills rise abruptly out of the plain and dry stream-beds intersect it. The better favoured of these wadies are lined with *heglik* (*Balanites Aegyptiaca*) trees, with an occasional gaunt *tebaldi* (*Adansonia digitata*). Such a wady had been taken by the Nurab; the tents all faced south and many had the sides built up with wood, an arrangement which keeps out the wind, and in addition forms a ready supply of fire-wood. This was in the cold season when a bitter wind blew from the north. After February, when the hot weather begins, the roofs of the tents are usually raised, and the open front built up with wood, leaving only a doorway; sometimes extra mats are hung up to keep out the sun. The tents stretched for about a mile along the wady. Any man who had more than one wife provided a tent for each; the concubines of rich men also had their tents, those of the wives always being in front, i.e., south of the others. There were also tents for slaves and zaribas for the horses. The head of every family had his retinue living to the east of him, then came the tents of his brothers and near relatives. Besides those in the main wady there were outlying groups of tents wherever a few trees afforded shelter. Two small and rather poor sections were encamped within a mile of the Nurab *feriq* and the Berara section was about 6 miles off.

On leaving the Nurab encampment, tracks were seen leading from every direction, for about $1\frac{1}{2}$ miles away lay the Showa wells where all watered their flocks. The wells probably numbered a hundred, each being about 2 feet across with no kind of barrier around them, the sides strengthened by mud and wattle. Here and there among the trees were rough huts built by those who brought their cattle from such a distance that they were obliged to spend the night before returning. The busiest time at the wells was always about noon, for to drink deep the cattle must have the water warm. Shallow troughs were puddled out over night or early in the morning beside the wells, and men and women, Arabs and slaves, worked continually, lowering wide-mouthed skins and filling these pools or pouring the water into skins to load upon donkeys or camels. In the middle of January, cows and goats were being watered every third day, sheep every fifth, horses every day, and camels, kept for convenience near the *feriq*, only drank once in ten days. But the main wealth of the tribe, the large herds of camels with young, were all away in the waterless wastes of the north-west where the ground is covered with the winter grass called *gizzu*. The camels and some sheep stay here for two or three months, roughly from November to February, during which time they are entirely

without water. The herdsmen live on camel's milk, but this may be supplemented by a little corn and water brought from the nearest settlements. Mr. MacMichael states that the beasts return from their winter grazing fat and in excellent condition, while the Arabs all say that not only do they keep well during the herding, but they recognize that to accompany the flocks north-west is the correct treatment for weakly youths and children.

But to return to the wells, the wisdom of the Kababish in building their *feriq* some distance from the water is realized when the enormous flocks and herds driven there are seen, and it is easy to understand how the soil becomes fouled. Naturally when a division first settles the cattle feed near, but soon every blade of grass in the vicinity of the *feriq* is devoured and nothing but sand and dry thorn bushes remain. So the cattle must go farther and farther afield, even at some risk, as when certain Berara men who took their sheep 60 miles away were raided from Jebel Midob over the Darfur border. In the Nurab section Arab women were never seen working or tending the cattle, though in other sections, less well provided with slaves, the women would often go with the cows and make butter, draw water, grind dura, and take part in all other heavy work. They do not herd the camels, as camel's milk is said not to agree with women; cow's milk is considered best for them as it is richer, and goat's milk is preferred for children. At the end of the season the camp is shifted, each *da'n* keeping together. A *da'n* consists of a man and wife or wives, children, and retainers, including all slaves and freed men under his protection. The cattle are driven in front, then follow the camels bearing the women, each of whom, if her husband is rich enough, reclines in her *utfa*. These are in the nature of a litter and the camels carrying them are covered with heavy leather trappings and certain elaborate ceremonial basketwork and leather vessels. The eldest daughter rides in her *tongoa*, a sort of cradle perched high above the camel's back and usually more richly decked than her mother's. The baggage camels plod along, while the men mounted on their trotting camels superintend the caravan. The big drums called *nugara* are carried on camels in the sheykh's *da'n* and before sunset the *a'adie*, four clear strokes, is sounded; then all *da'n* must line up and take their places for the night. In the morning the camp is roused by the *dib*, one stroke repeated at intervals of a few minutes, and in a short time each *da'n* is again upon its way. The march is usually continued for about ten hours without a break, but with heavily laden camels the pace is slow. This mode of travel continues until the winter quarters are reached.

In addition to the wells that the nomads dig for themselves each year there are a few permanent wells such as Bir Soderi at the foot of Jebel Kaja. The making, cleaning, and using of such wells was often the cause of tribal disturbances in old times and even now is a fruitful source of bad feeling.

A fair estimate of the physical characteristics of the members of such a tribe as the Kababish may be gathered from the photographs on Plate XXXVII which will show the large amount of variation that occurs. Skins of all colours may be

seen, from the lightest wheaten to a fairly dark brown-black, and the noses of these people may present every character except excessive breadth; nor can the shape of the nose and the darkness of the skin be said to be closely co-related. Thus the ruling family has for generations been particularly dark-skinned, so, too, is the present sheykh Ali Tom (Plate XXXVII, Fig. 5), yet this man's nose and the noses of a number of his dark-skinned relatives are well formed, with high bridges and thin nostrils. It should be noted that round-headed individuals are found in small number and also, but quite rarely, individuals are seen with well-marked Armenoid ("Jewish") noses, the latter, indeed, may occur in individuals with quite long heads.¹ The following indices will give some idea of the general average of the tribe; it is interesting to note that there does not appear to be any substantial difference between the main body of the tribe in Kordofan and the outlying, more or less sedentary members of the tribes in the neighbourhood of Dongola.²

| | No. | C.I. | N.I. | F.I. | Stature. |
|--------------------------|-----|-----------------------|------------------------|-----------------------|---------------------|
| Kababish of Kordofan ... | 15 | 74.13 | 70.2 | — | — |
| Kababish of Dongola ... | 9 | 74.5 | 68.9 | — | — |
| Total ... | 24 | 74.29 (± 35) | 69.7 (± 1.04) | 88.83 (± 67) | 1709 (± 8) |

An examination of the mode of life and customs of these people shows, however, that they have been profoundly affected by some foreign, *i.e.*, non-Arab, influence.

The Kababish are the strongest of the nomad camel-owning Arabs of the Sudan, probably they are also the least sophisticated, and their manners and customs may be taken as typical examples of those existing among the least contaminated nomads. Although they do not form a homogeneous whole derived from a single ancestor, the several elements which have entered into the composition of the tribe are perhaps less contaminated with Negro blood than those composing any other Arab tribes in the Sudan. Nor do these elements differ radically in their composition, being determined largely by political considerations and further complicated by questions of grazing and watering rights. This was well shown during the Mahdia, when the divisions that had been living long together for the

¹ The co-existence of even extreme long-headedness and a "Jewish" nose may be noted among Jews in this country at the present day, but it is by no means common.

² The latter were measured by Mr. O. Atkey, F.R.C.S., and the measurements sent to Dr. Duckworth, whom I take this opportunity of thanking for allowing me to use them.

most part stayed with their sheykh, Salih Bey Fadlulla, and even after his execution refused to have anything to do with the Khalifa. As a rule the other divisions and tribes who had joined the Kababish, in order to enjoy their privileges, broke away and joined the revolt. After Omdurman some, like the Guhayna and Berara, again joined the Kababish, while others, such as the Kawahla and Shenabla, retained their independence.¹

The Kababish are divided into a number of patrilineal divisions called *khasm beyt* (خسم بيت), many of which are subdivided into smaller groups or sections (also often called *khasm beyt*), which, for the most part, include a number of families, using the word family in a rather extended sense.

A list of the tribes and subdivisions of the Kababish as they exist at the present day is given by MacMichael.² On examining this list it will be seen that out of the names of all the divisions and subdivisions, 80 in number, no less than 24 end in *-ab*, the affix which in the To Bedawi language signifies "sons of" or "descendants of." This alone would suggest the existence of a strong Beja element in the tribe, a presumption confirmed by the fact that some of these names are identical with those of certain of the divisions of the Hadendoa and Amara. I cannot say how many such correspondences exist, but in the few weeks that I spent among the Beja I found the following names of Kababish divisions among the Hadendoa and Amara:—

Hamdab, a Hadendoa division;

Balulab, a subdivision of the Hadendoa division Sherab;

Nurab, an Amara division;

Manufalab, an Amara division.

To these there should no doubt be added Bishariab, which can scarcely be other than the Kababish Bisharab.

The Beja (Hamitic) element in the Kababish, which these facts suggest, agrees well with results of an examination of the habits and customs of the tribe. Three culture strata can be distinguished; a superficial incrustation of Islamic habits and beliefs superimposed upon a layer of pagan Arab customs which itself covers a third, slighter but perfectly definite culture stratum, characterized by beliefs and customs which, there is every reason to believe, belong to an older social fabric. This can scarcely be other than Hamitic, and in this stratum I would class the mutilation of girls, discussed at some length below,³ and the great feast held about a year after a death, at which mourning is discarded.⁴

As far as I can determine there is no evidence as to the length of time that has elapsed since the Beja ancestors of these tribes joined the Kababish, if indeed they joined them directly, for it is by no means improbable that they came in after

¹ H. A. MacMichael, *op. cit.*, p. 177.

² *Op. cit.*, pp. 173-176.

³ *Cf.* p. 639 *et seq.*

⁴ Although this ceremony is called *Sadogah*, it has retained features which long antedate Islam and which as far as I can discover are not pagan Arab.

sojourning with some of the more easterly riverain tribes among whom names with the affix *-ab* are also found.¹ The fact that none of the divisions cited possess the same camel brands (*wasn*) as their supposed eponymous Beja stocks may perhaps indicate that their absorption into the Kababish took place more than about six generations ago, the period at which, according to my experience, family history tends to become frankly mythic.

Nilotes and Half-Hamites.

Turning now to the Negroid tribes among whom there is evidence of Hamitic blood, the Nilotes call first for consideration. There can be no doubt that there is a foreign non-Negro element in the Shilluk, the most northern of the Nilotic Negroids, and though this foreign element is not so obvious in the Dinka and Nuer there can be little question that it exists in them too. Their close relationship to the Shilluk in physique and culture would seem to indicate that the same elements, even if in somewhat different proportions, have entered into all three tribes.² The Nuer and Dinka, indeed, stand so closely together in social organization, including totemism and religious beliefs, that I look upon them as substantially one people differing perhaps no more from each other than other admittedly Dinka tribes differ among themselves.

All are tall, long-headed, dark, woolly-haired Negroids, their skin showing no traces of the reddish or copper colour found in the shorter rounder-headed folk living in the south of the Bahr el-Ghazal Province in the neighbourhood of the Nile-Congo watershed. Although their features are usually coarse, and their noses very broad, being platyrrhine or hyperplatyrrhine, individuals occur even among the Dinka and Nuer who are broader nosed than the Shilluk, with nasal indices below 80, while among the Shilluk it is not uncommon to meet men, especially members of the aristocracy, with shapely features, including thin lips, noses that are anything but coarse, and well-modelled foreheads. I have no measurements of men of this description, indeed, three years ago it was difficult to persuade the Shilluk in the neighbourhood of Fashoda to allow themselves to be photographed, and they would not have tolerated being measured. However, the matter will be clear by considering the photographs of Shilluk reproduced on Plate XXXVIII; Figs. 3 and 4 represent an average Shilluk adolescent, Figs. 1 and 2 represent a member of the aristocracy of the refined type, while Figs. 5 and 6 are photographs of the coarsest Shilluk I met, whose face, Negro rather than Negroid, would not be out of place among a collection of West African Negroes.

The following account shows that the refined type also occurs among the Anuak of the Pibor River, a people closely akin to the Shilluk. "The Anuak strike me at first sight as being a very mixed people, they vary a great deal in colour and a

¹ There is a division among the Kawahla that recognizes its Ababdeh origin, the two peoples can scarcely have come into immediate contact at any period subsequent to their occupation of their present territories.

² The existence of an Hamitic element in the Dinka was recognised by Mochi in his paper "Sull' Antropologia dei Denka," *Archivio per l'Antropologia e l'Etnologia*, vol. xxxv, 1895.

good deal in feature, some of their faces are startlingly European in their regularity of feature and breadth of forehead. I have never seen such intelligent-looking natives. Some of them have got remarkably fine noses with their thin nostrils and lips, but their faces as a class seem to lack that hawk-like look of cruelty so noticeable in the good-looking Jaalin Arabs."¹

The following table gives the results of the chief physical measurements which can usefully be represented by figures:—

| | No. | C.I. | N.I. | F.I. | Stature. |
|--------------------------|-----|-----------------------|--------------------------|-------------------------|----------------------|
| Nuer ² ... | 40 | 73.55 (± 35) | 100.08 (± 1.23) | 83.16 (± 1.06) | 1,796 (± 7) |
| Dinka ³ ... | 85 | 72.71 (± 20) | 91.63 ($\pm .94$) | 86.0 ($\pm .57$) | 1,786 (± 6) |
| Shilluk ⁴ ... | 21 | 71.3 (± 44) | 93.36 (± 1.66) | 83.27 (± 1.29) | 1,776 (± 9) |

It will be seen that, broadly speaking, the members of these tribes form a fairly homogeneous group, the most striking feature being the difference between the nasal index of the Nuer and the other two tribes. With regard to the slightly higher index for the Shilluk than for the Dinka, this is too small to be regarded as significant, and I am inclined to think that it is accidental, due to the small number of Shilluk measured. Certainly the impression I gained from associating with both peoples was that the Dinka were rather broader-nosed than the Shilluk. The view that the nasal index given for the Shilluk is not truly representative and may be unduly high is confirmed by the large error of the mean calculated for this people, viz, 1.66 as against the Dinka .94 (85 subjects) and the Nuer 1.23 (40 subjects).

As will be seen from the tables of measurements given at the end of this paper the actual range of variation is considerable, thus, even neglecting extremes,

¹ This passage is an extract from a letter from Captain A. G. Cummins, R.A.M.C., to Major Lyle Cummins, R.A.M.C., to whom I am indebted for permission to quote it.

² Measured by the late Dr. A. M. Pirrie; the measurements of twenty-seven of these have been published by Professor Waterston (*op. cit.*, p. 348), those of the remaining thirteen are given in Appendix I at the end of this paper.

³ The cephalic index of the Dinka are taken from 148 subjects, measured by Pirrie, Mochi, C. S. Myers, and myself, including the series of skulls brought together by Mochi as well as those collected by myself. The latter belonged to members of the Bor tribe. Two units have been added to the C.I. of each skull to render cranial and cephalic indices comparable. The stature is taken from 116 subjects.

⁴ The figures here given are from the small series measured by Myers and by Pirrie. The N.I. of 11 only could be calculated; the F.I. is the average of 19 and the stature that of 14.

the C.I. of the Dinka varies between 66 and 80, and the N.I. between 84 and 102. Nevertheless, it does not appear that this betokens that the infusion of foreign blood is recent, on the contrary the comparatively uniform condition of the Nilotic peoples and their culture, and the vast area over which they are spread, seem to indicate that the foreign, non-Negro element in these people is of high antiquity. This view is supported by an examination of the curves of distribution plotted for the C.I. and N.I. of the Nilotes. These curves have been examined for me by Dr. Bowley, who reports that for the Dinka the actual C.I. and N.I. curve closely fits the normal curve of distribution, so that he remarks that if there has ever been any mixture there appears to have been thorough fusion.¹

A good deal of interest attaches to the stature of this group, of the allied Bahima and of the tribes of the Masai group in East Africa; nor in considering these is it possible to leave aside the Southern Bantu (Zulu-Kaffirs). The men of all these tribes are tall, the Bahima are probably the tallest men in the world,² yet all seem to have sprung from the fusion of the short, slim Hamite,³ and the moderately grown, stoutly built forest Negro. As far as I have been able to ascertain, the numerous breeding experiments on Mendelian lines that have been carried on in recent years afford no parallel instance, indeed, nothing seems to be known of the conditions producing variations in size in animals.⁴ However, it is worth noting that among plants there is at least one instance in which a giant race arose under experimental conditions without any selective effort directed towards its production having been made,⁵ while there may be an interesting parallel to the stature of the Nilotes and related tribes in the result of the union of the dwarf procumbent pea (commonly called the Cupid Pea) and the bushy pea, the latter being a stiff upright-growing plant of medium to short stature: the first generation of hybrids are all giants.⁶

No doubt it was at a relatively remote period that a people whom we may call

¹ Dr. Bowley's figures are given in Appendix II.

² Professor von Luschan (Appendix II, to Meinhof, *Die Sprachen der Hamiten*, p. 251) states that the Hima often exceed 190 cm. in height, and speaks of them as doubtless the tallest men.

³ The stature of the predynastic Egyptians was scarcely 65 inches (164 cm.), *cf. supra*, p. 607.

⁴ I purposely leave out of consideration individual instances of gigantism due to disease of the pituitary gland and sporadic examples of conditions associated with nanism or infantilism due to abnormalities in quality or quantity of the internal secretions.

⁵ In *Primula sinensis*, observed by Dr. F. Keeble; his experiments, *cf.* "Gigantism in *Primula sinensis*," *Journal of Genetics*, vol. ii, pp. 164-188, indicate not only that the giant form which breeds true arose from a normal strain of known pedigree but lead him to state that "Giants which breed true may be produced by crossing non-giant races of *Primula sinensis* (*op. cit.*, p. 187). It does not appear to me that the experiments cited (*op. cit.*, p. 180) upon which, if I understand Dr. Keeble rightly, this statement is based, are conclusive, though I think they might become so if carried on for a few generations; they certainly seem to point in this direction. It is noteworthy that these non-giant (or at best semi-giant) races have been under observation for years and have never produced a giant.

⁶ *Cf.* Bateson, *Mendel's Principles of Heredity* (1909), p. 19. I am indebted to Dr. R. N. Salaman for drawing my attention to these interesting experiments.

proto-Hamites, moving in a predominantly southern and western direction, fused with the earlier darker inhabitants of Africa—Negroes and Negroids, including in the latter term Negrillos—to produce a number of peoples differing enormously in physical characters, but united in the possession of a common stock language which we now call Bantu. This view, advocated by Stuhlmann¹ and developed on the linguistic side by Meinhof, has been examined at length by Father Hestermann.² Much stress is laid upon the evidence offered by the Ful, a people of mixed Hamitic descent³ whose tongue, spoken by scattered communities from Senegal to Lake Chad, is Hamitic, but varies from all other Hamitic languages and resembles the Bantu in many ways. Thus, substantives are divided into classes and there is the same type of alliterative consonance.

Hestermann also points out that there are remarkable resemblances in phonology and that "the genitive construction with the demonstrative of the governing noun" (*Die Genitivkonstruktion mit Demonstrativ des Regens*)⁴ is formed exactly as in Swahili.⁵ Other arguments in favour of the mixed origin of Bantu may be found in the "Sudanese" (Negro) characteristics retained in some Bantu languages. Such Negro, *i.e.*, pre-Hamitic, characters are the occurrence of monosyllabic roots and the comparatively important part played by musical tone; both these features

¹ *Handwerk und Industrie in Ostafrika*, p. 7 (Hamburg, 1910).

² "Sprachen und Völker in Afrika," *Anthropos*, 1912, vii, pp. 219-250, and 1913, viii, pp. 722-760. Meinhof's point of view is given by Hestermann in the following quotation (*op. cit.*, viii, p. 222). "As far as I can discover this exchange between Hamite and Negrito can be clearly seen in a number of instances and I am persuaded that the origin of the Bantu languages is most easily explained thus, that one of the languages similar to the Ful arose as the master language (*Herrensprache*) among the Negrito and assimilated Negritic elements." It must be remembered that Meinhof and his school use Negrito for Negro.

³ Many of the Ful have much Negro blood in their veins, the purest "cow-Fulani" of Nigeria have been described to me as an almost white-skinned people leading a wandering pastoral life.

⁴ As if in English for "house of stone" we said "house that stone," *i.e.*, "that house (is) stone."

⁵ Concerning this point Mr. Ray writes as follows: "I do not quite follow the argument that in Ful this is exactly the same as in Swahili." Meinhof gives in Ful:

"(i) *sauru ndu yandɛ*, rod of iron (rod this iron);

"(ii) *puɛn ɪgu lamɪdɔ*, horse of the king (horse this king);

"(iii) *ɛɛɛ ndɛ anasara*, money of the European (money this European),"

and says, "This construction again strongly resembles the Bantu."

In the above Ful the nasal prefix is the essential part of the demonstrative, the *du* in (i) agreeing with *ru* in *sauru*, rod, the *u* in (ii) with *u* in *puɛn*, horse, and the *ɛɛ* in (iii) with the *ɛɛ* in *ɛɛɛ*, money. But I do not find exactly the same in Swahili:

(i) *ndege za anga*, birds of air;

(ii) *kiti cha sultani*, chair of sultan;

(iii) *mkate wa watoto*, bread of children.

Here *a* is the possessive word "of," the *z* in (i) agrees with the *n* in *ndege*, birds, the *ch* in (ii) with *ki* in *kiti*, chair, and *w* in (iii) with *m* in *mkate*, bread. Moreover there is no demonstrative used. (In Swahili the corresponding demonstratives would be (i) *hizi*, *hiyo* or *ile*; (ii) *hiki*, *hicho* or *chile*; (iii) *huu*, *huo* or *ule*.)

A personal pronoun may be used in Swahili for emphasis as in *kiti chake sultani*, chair it of him (*ke*) sultan (*i.e.*, the sultan's own chair).

occur in Duala, a Bantu language spoken in the Cameroons by a people occupying the north-western edge of the Bantu area, i.e., a portion in which the Hamitic influence might be expected to be comparatively slight.

Doubtless the proto-Hamites came in a series of waves spread over a long period of years, and there must have been unending variations in the stocks to which they gave rise, and in the peoples who sprang from the fusion of these, even as at the present day the Bantu differ enormously among themselves in physique and culture. Just as the Bantu arose seemingly as the result of the interaction of proto-Hamite and Negro so, we may be certain, there arose tribes and peoples of mixed blood who, in spite of minor modifications and the introduction of some foreign elements, retained their old African tongues. If, as seems reasonable, these tribes are at the present time represented by the Nilotes and the half-Hamites, then the similarities between these people on the one hand and their undoubted resemblance to the Bantu on the other are easily and logically explained. We cannot at present judge whether the main interactions which gave rise to the Nilotes took place at approximately the same period as those to which the Bantu owe their origin, but in support of the suggestion that parts at least of these two great stocks may have arisen at about the same time, I would refer to the close resemblance in the social organization and religion of the Zulu-Kaffir and the Dinka.¹ This is not the place to go into this matter in detail; I will only mention the totemism of both peoples, the importance of rainmakers, and the comparatively small cult of the high gods compared with that of ancestral spirits. With regard to the cult of the latter the similarity in the ideas of Zulu and Dinka is amazing. A distinct mental effort has at times been necessary when reading Callaway's "Religious System of the Amazulu" to remember that it was not an account by another traveller of the beliefs that I had found among the Dinka. I will go even further than to urge the uniform origin, within broad limits, of the Nilotes, the half-Hamites and the Southern Bantu, and will suggest that it is on account of Hamitic influence that the fetishism, polytheism and human sacrifices found in West Africa scarcely occur among the peoples now under consideration.² Yet in

¹ The likeness of Nilote and Kaffir is not limited to social organization and religion. The refined type of Shilluk shown in Plate XXXVIII, Figs. 1 and 2, is matched by the photograph of a Zulu girl with a narrow face and straight, high-bridged nose, published by von Luschan (*op. cit.*, Plate X). It must be remembered that it is by no means uncommon to find among the Zulu-Kaffir individuals with narrow, or even high-bridged noses, thin lips, relatively light skin colour, and hair that is by no means woolly. Von Luschan, who estimates that he has observed more or less closely some 5,000 Zulu and other Kaffirs, says that of this number 23, i.e., nearly 5 per cent., showed a combination of a number of these characters.

² This view is in direct opposition to that put forward in 1911 by Dr. Wallis Budge in *Oniris and the Egyptian Resurrection*. Dr. Budge regards the predynastic Egyptians as cannibals, with the same lust for human flesh that is found in the savages of Equatoria at the present day, and states that, like the latter, "the primitive Egyptians were in the habit of burying slaves alive in the graves of great kings and chiefs" (*op. cit.*, p. xxii), while even in the fourth dynasty he speaks of the sacrifice of "countless human beings" (*op. cit.*, p. xxiii), in the Sun temples at Abû-Sir. Granting, for the sake of argument, that Dr. Budge has adduced

spite of the common origin of the three peoples it does not seem possible at present to produce evidence of technical processes or implements common to all, or even to both Nilotes and Southern Bantu, which can be referred to early Hamitic influence. Such cultural characters as they have in common seem to belong rather to the black element which occurs in both. Moreover, these points of resemblance seem to be negative rather than positive. Thus, considering the Nilotes and Zulu-Kaffirs, covering in the males is entirely absent, or exists only in so rudimentary a form as the protection worn over the glans penis by the Zulu; nor do either folk mutilate their girls.¹ Of weapons, the throwing-stick is absent from both peoples, and probably the same may be said of the bow.² There are, however, a few points of positive resemblance; neither Zulus nor Nilotes despise handicrafts, indeed, skilled workmen are appreciated by both people.³ Again the shields of Zulu and Nilote are oblong and made of skin, though here the resemblance ends,⁴ and both have wooden clubs though the Zulus habitually throw theirs and the Nilotes do not.

Our knowledge of the half-Hamites is curiously incomplete considering how extensively some of these tribes have come into contact with Europeans of late years, and the amount of printed matter that is concerned with them. Nevertheless, certain interesting comparisons can be made with the Beja and even with the Nilotes. Physically they appear to resemble the latter more closely than the former in spite of their somewhat shorter stature and lighter colour, though even in physical characters evidence seems to be somewhat contradictory. Yet I think it may be agreed that, broadly speaking, they stand nearer physically to the Nilotes

good evidence for the occurrence of these and the other blood-thirsty rites which he mentions (although some will feel doubtful of this), and that he is right in regarding them as closely related to those of West Africa, his explanation implies that the "African" religion of which he writes as forming the basis of Egyptian belief in predynastic times is essentially Negro in origin though Dr. Budge avoids using this word.

This view, which has always seemed to me inherently improbable, has become even more difficult to accept since Elliot Smith has shown that the predynastic Egyptians and earliest Nubians were not even Negroid. It seems scarcely credible that the White Race borrowed its beliefs from Negroes, with whom it had so little contact that miscegenation seldom or never occurred.

I believe that the facts brought forward in this paper suggest a more reasonable explanation of the features common to the social life and religion of ancient Egypt and of tropical Negro-land and indicate that these are due to the infiltration of the latter with the ideas of that great White Race of which the predynastic Egyptians constitute the oldest known as well as one of the purest branches.

¹ The Bechuana are an exception to this rule, *cf. infra*, p. 645.

² The bow occurs among the Agar Dinka of the Southern Bahr el-Ghazal. I regard this as being due to cultural drift from the Azande or kindred tribes.

³ In this they differ entirely from the half-Hamites, such as the Masai, whose spears and metal ornaments are made for them by the Dorobbo, whom they despise.

⁴ The shields of the Zulu are of the well-known oval shape, those of the Nilotes are narrower and tend to be rectangular, often the upper and lower edges are concave and there is usually a central boss. Possibly no importance should be attached to this rather remote resemblance, but it is at least worth noting that neither use round shields similar to those employed by pure Hamites such as the Beja and Somali.

than to the Hamites, and though much shorter in stature their features do not approach those of the Hamito-Semitic branch of the White Race so closely as do those of the Bahima. On the other hand, unlike the latter, they circumcise their males and mutilate their girls. I am further inclined to see traces of their Hamitic descent in the character of their pottery and in the predominance of spiral technique. It is known that as regards basketry this process is extremely old in the Hamito-Semitic area; examples are known from predynastic and first dynasty tombs, it persists through the whole historic period and is used at the present day among the Beja (Hadendoa) and the Arab tribes of the White Nile and Kordofan. In the north-west of the continent it occurs among the Tuareg and many tribes of mixed descent. It was in use 2,000 years ago in Arabia, for Mr. C. M. Doughty has shown me a fragment of a basket made by this process which he brought back with him from the tombs of Medain Saleh. It is in use among the Waheia¹ in the neighbourhood of the great lakes at the present day. On the other hand, as far as my personal observation goes, it does not occur among the Nuba of Southern Kordofan, while Ankermann states that it is absent in the

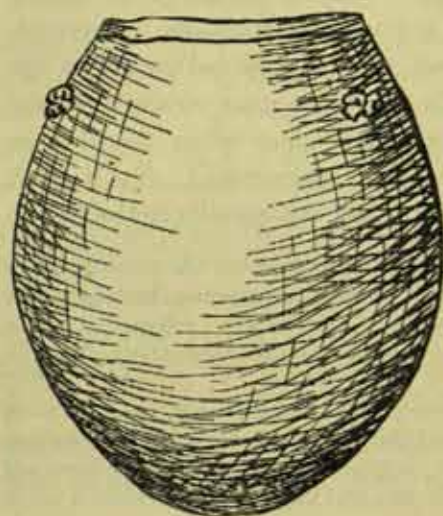


FIG. 1.

West African culture zone.² Turning now to pottery, there is, as far as I am aware, no evidence how the proto-Egyptians made their pots, but at the present day the Hadendoa make vessels of the class shown in text figure by the usual spiral technique of superposing lengths of rolled out strips of clay. These pots closely resemble those (without necks) made by the Nandi and figured by Mr. Hollis.³ Unfortunately no mention is made of the process by which these pots are produced, but their likeness to the Hadendoa pots is sufficient to make it at least probable that the same process is employed. The Anuak (Nilotes) of the Sobat and Pibor Rivers make their pots by the

superposition of clay rolls⁴ and this is the common method in Kordofan as it is further south among the Zulu-Kaffirs.

Since the above was written important confirmatory evidence has been obtained from linguistics. Westermann, who has recently spent some time in the Shilluk country studying the language, considers that this, as well as Dinka (and Nuer), belongs to a well-characterized sub-division (Niloto-Sudanic) of a larger linguistic group which he speaks of as Nilotic. The Nilotic languages originally

¹ Max Weiss, *Die Völkertämme in Norden Deutsch Ostafrikas*, p. 432.

² *Zeitschrift für Ethnologie*, vol. XXXVII, 1905, p. 70.

³ *The Nandi*, Plate XIII.

⁴ I am indebted to Captain A. G. Commins for this information.

belonged to the family of the Sudan languages, for various elements "in all Nilotic languages point to this common origin. . . . But at a certain former period all these languages had been influenced more or less strongly by languages of a different character, which are generally called Hamitic languages."

It will be seen that not only do Westermann's conclusions confirm the idea put forward in this paper on physical and cultural grounds, but since languages of, or akin to, the Nilotic group are spoken by the half-Hamites of British and German East Africa and also by a number of tribes of the Congo basin¹ some suggestion is offered of the remoteness of the period at which the infusion of Hamitic blood began.

Mutilation.

Having discussed, within the limit of available material, the physical characters of the chief peoples of the Anglo-Egyptian Sudan who are themselves Hamites or in whom is a strain of Hamitic blood, it is necessary to consider the significance from the ethnic standpoint of a custom which may be said to be universal in eastern tropical Africa. This custom is the mutilation of the female genitals. I use the term "mutilation" for every grade of operation on the external organs, from a partial clitoridectomy to the most sweeping infibulation, for, as I shall endeavour to show, I hold that all have a common origin. Before proceeding to record the facts I will indicate briefly my line of arguments, and point out that the geographical distribution of the custom of mutilation in Africa and the East indicates that it arose in the Hamito-Semitic area in the neighbourhood of the Red Sea. It is distributed round this area in just such a manner as might be expected if it had at first remained more or less localized among the peoples sprung from a common stock, and had then been carried far afield by the great wave of Semitic influence that followed the birth of Islam. Thus, while its distribution eastwards is sporadic, as though carried by trade and isolated colonies, it radiates from the shore of the Red Sea westwards and southwards across Africa with ever diminishing intensity.

There is no doubt that circumcision is an old Hamito-Semitic custom; wherever mutilation is practised circumcision also prevails, but the area over which this rite is found is so much wider than that covered by mutilation that I have purposely chosen the latter as presenting the simpler problem. To have examined the distribution and significance of circumcision would have necessitated a discussion of south and west African problems for which I am by no means prepared.

At this point it will be well to allude to a common misconception. The Barabra, the Beja, the Arab and even the darker so-called "Arab" tribes of the

¹ The Bari language is akin to Masai; moreover, Westermann (*op. cit.*, pp. 34, 35) points out that certain tribes lying between the upper waters of the Rivers Rohl and Sue speak languages which in a broad way seem to be connected with the Niloto-Sudanic group, so that perhaps they may be regarded as a sub-group of these. To this sub-group belong Mittu, Madi, Madi-Kaya (Abo-Kaya), Abaka, Luba, Wira, Lendu, Moru. According to Schweinfurth the six first named of these tribes speak dialects of one language.

Sudan all perform a severe operation upon their girls, the whole of the labia majora and minora and the greater part of the mons being removed, so that after healing has taken place the opening of the vagina is represented by a minute orifice immediately anterior to the rectum.¹ There does not appear to be any evidence that this (infibulation) or any serious operation similar to it is a Semitic, Arabian, or even essentially a Moslem custom, though since the area in which it is practised coincides with that occupied by the tribes of the Sudan who profess Islam it is common in the Sudan to find it regarded as an Arab, or at least Mohammedan custom.² But far from this being the case, the custom is not found in Egypt, Algeria, Morocco, or Syria, nor, so far as I can ascertain, does it occur in Arabia.

Equally severe mutilation has been recorded among the Somali and Danakil, e.g., by Paulitschke³ and recently by Creignou,⁴ who states that the object of the operation is the complete ablation of the labia majora and minora and the clitoris, but that as the operation is done without an anæsthetic, and the operator works hurriedly according to her own ideas, excision is not always complete. The children are generally four to six years old, but sometimes younger: almost any old woman may operate, and with the exception of a minute orifice posteriorly the *aditus vaginae* should be completely closed. To ensure this result thorns are thrust through the opposite edges of the wound and maintained in place by a figure of eight suture. To assist healing the patient is kept on her back and her knees and ankles bound together. The comparatively slight operation of clitoridectomy is extensively practised in Egypt at the present day, at least among the lower classes, for Professor Elliot Smith informs me that the glans clitoridis is always wanting in dissecting-room bodies. I cannot say whether the practice is general in Syria;

¹ My summary description of the operation is based on the examination of a number of Kababish children and adult slaves, and in all these it was clear that a clean sweep had been made of the whole vulva, except its extreme posterior edge, including the greater part of the mons. This was also the procedure at Jebel Kaja, where I had the opportunity of seeing the operation performed. No doubt the technique of the operation varies locally: it could not be more severe than among the Kababish, with whom the use of the knife is an absolutely necessary preliminary to marriage. The Hadendoa, on the other hand, stated that the use of a knife was unknown, and that it would be shameful if penetration were not effected without extraneous aid. On the other hand, both people admit that so much scar tissue is formed that the vulva requires incision before a child can be born.

Captain R. G. Anderson of the Egyptian Medical Corps ("Medical Practices and Superstitions of Kordofan," in the *Third Report of the Wellcome Research Laboratories*, 1908) states that two operations are in vogue in the Sudan. Where only the clitoris and labia minora are removed the operation is termed *Takuret Sunna*, this operation being "mostly restricted to the Bagara tribes" (*op. cit.*, p. 320). The more severe *Takuret Farohen* is practised by other Sudanese Mohammedans, in this the "upper two-thirds of the labia majora are also removed" (*loc. cit.*), this operation being "popularly supposed to denote an ancient method practised in, and handed down from, the time of the Pharaohs."

² So, e.g., says Captain Anderson, *loc. cit.*

³ *Ethnographie Nordost-Afrika*, I, 174 (Berlin, 1893).

⁴ *Supplément à L'Anthropologie*, "Comptes Rendus des Séances de L'Institut Français d'Anthropologie," No. 6, 1912, pp. 111 *et seq.*

educated Syrians with whom I have discussed the matter in the Sudan say that it does not occur, but this testimony cannot be regarded as conclusive with regard to the lower classes, for Duhousse, writing of Beyreuth, describes clitoridectomy as commonly performed by barbers on children between nine and twelve years old.¹ It does not occur among the Arabic-speaking population of Algeria and Morocco,² but in Abyssinia the operation was recorded 300 years ago by the first Jesuit missionaries to that country, and we have written evidence of the practice in Egypt some two thousand years ago, for the well-known passage in Strabo *Circumcidunt etiam mares et foeminas excidunt* indicates that at least clitoridectomy, and perhaps partial or complete excision of the labia minora, was practised. Moreover, at this time circumcision and "excision" were the rule among the barbarous Cresphagi, seemingly nomad Hamites, who lived in the neighbourhood of the harbour of Antiphilus (*Strabo*, Bk. xiv, 4, 9), identified as Hamfilah on the Red Sea Coast about 100 miles south of Massaua. Nearly two centuries earlier, i.e., about the middle of the second century B.C., Aramaïos of the Serapeum records that the mother of one Tateni, a girl in his charge, had obtained money from him on the false plea that her daughter was to be circumcised, "as is customary among the Egyptians," urging that she required money for the rite and to endow her daughter for marriage.³ The practice continued into Christian times, for St. Ambrose (*ob.* 397) also refers to the "circumcision" of Egyptian women, "*Aegyptii quartodecimo anno circumcidunt mares; foeminae apud eos eodem anno circumciduntur, quod eo scilicet anno incipiat flagrare passio virilis.*"⁴

Professor Elliot Smith, whom I have consulted with regard to the possibility of obtaining anatomical evidence from mummies, tells me that no information can be gathered in this quarter, for "the pelvic viscera were so completely excised and the remains of the labia so stretched by the plugging of the pelvis that nothing can be said about the condition of the vulva during life." With regard to predynastic women he states that there was certainly no infibulation, and that in some cases he was able to recognize the labia minora and (with less certainty) the clitoris. But, as he points out, "a shrunken labium minus is not easy to identify," so that although there is nothing to suggest any operative procedure it cannot be said that the clitoris and part of the labia minora may not have been removed.

Clitoridectomy is still the custom among the Christians of Abyssinia⁵ as it

¹ *Bulletin de la Société d'Anthropologie de Paris*, XII, 1877, pp. 124 et seq.

² Some years ago I spent some weeks in Algeria and I think I should have heard of the custom had it existed; with regard to its absence in Morocco my statement is based on information given me by Professor Westernmarck and Mr. S. L. Bensusan.

³ Bernadino Peyron, *Papyri Graeci del Museo Britannico di Londra* Papyrus XV, pp. 85 et seq., (Torino, 1841).

⁴ Ambrosius, *De Patriarcho Abrahamo*, lib. II, Cap. II.

⁵ For this information I am indebted to Abyssinian merchants whom I met at Tokar, and who drew the sharpest distinction between clitoridectomy and the larger operation practised by the Somali and other Mohammedan tribes.

was in the seventeenth century when Ludolfus discussed its distribution in the Near East and noted that the operation was wrongly called circumcision.¹

There is no doubt as to the former wide extension of the rite among the Arabs of Arabia and Syria. In folklore its origin is attributed to Sarah, who performed the operation on Hagar while she lay asleep in order to lessen Abraham's love for her, and it was only after this that Allah commanded Abraham and Sarah to be circumcized themselves. Moreover, the antiquity of the rite is established, for, according to Ibn al-Athir (*ob.* 1234), Mohammed himself said, Circumcision is an ordinance for men and is honourable for women.² There are, indeed, actual records dating from the earliest years of Islam which refer to the rite practised by the pagan Arabs, and which also seem to indicate that the operation performed was clitoridectomy, or perhaps an even slighter operation, more closely analogous to circumcision in the male. There are several references which go back to the end of the sixth century; al-Nabigha, a poet who flourished about this time, said "And (our horsemen) laid hold of maidens in a state of pleasant ease, and made them hasten the fact of circumcision."³

Ibn Hishām (*ob.* 834) in his description of the fight between Hamzah (an uncle of Mohammed) and Siba ibn 'Abd al-'Uzza at the battle of Uḥud (A.D. 625) represents Hamzah as calling out "Come on, O son of the cutter of the prepuces (بُظْر, plural of بَظْر, bazr) of the clitoris," referring to the fact that his mother habitually operated on girls at Mecca. The fact that Zayd ibn Thābet, another warrior present at this battle, "circumcized his daughter," is referred to in the *Kitāb al-Aghānī*.⁴

The Poems of the Hudhaylites, composed by the poets of the Hudhayl tribe and collected by al-Sukkari (*ob.* 888), contain references to the mutilation of women, and show that among those tribes practising the rite the natural state was looked upon with contempt. Khālid ibn Wāṭhilah, who lived about the end of the sixth century, speaks of "A company of people who do not circumcize their women, and among whom the eating of locusts is not reprobated."⁵ Another poem composed by Abu 'l-Muwarriq at about the same time says, "If you were to become his neighbour (or guest) in Hudhayl, he would turn you away and your mother with the long prepuce of the clitoris."⁶

There are also passages in the *Kitāb al-Aghānī* which indicate the contempt felt for uncut women. Thus there is recorded a conversation said to have taken place in the presence of the Caliph Hisham (A.D. 724-743): al-Walid, his successor,

¹ *Commentarius ad Suam Historiam Aethiopicam*, pp. 172-173 (1691).

² Hastings' *Encyclopædia*, art. "Circumcision."

³ The word *ḥḍar* (حِذْر) is that generally used for the circumcision of men.

⁴ *Op. cit.*, vol. xvi, p. 14, l. 26. This work, *The Book of Songs*, was compiled by Abu 'l-Faraj Isfahānī, who died A.D. 967, but contains poems of many different and earlier dates.

⁵ *Op. cit.*, p. 147, l. 2.

⁶ *Op. cit.*, p. 179, l. 5; the word used is *'unāb* (عُنَاب), which means "having a large preputium clitoridis."

twitted 'Abbas b. al-Walid b. 'Abd-al Malik on account of the condition of his mother, who was a Greek and therefore un mutilated. Al-Walid said to 'Abbas, "Silence, O son of an uncircumcized woman," to which the latter answered, "Do you exalt yourself over me on account of what has been cut from the *baẓr* of thy mother?"¹

The *Nakā 'īd* contains a poem in which Jarir (ob. 728) satirizes his rival al-Farazdaq of the clan Mujāshī', "The circumcisers fear in the case of the daughters of Mujāshī' the likeness of crooked sticks or the horns of mountain-goats."²

In Burton's translation of the *Arabian Nights*, circumcision occurs as an essential part of conversion to Islam in the story of "The Moslem Champion and the Christian Damsel," in which the heroine "became a Moslemah, after she was circumcized."³ But Professor Arnold, whose assistance I sought in the hope that he might be able to determine the date of this story, considers that this translation is incorrect, the word translated "circumcized" signifying "purified herself."⁴

Perhaps Burton was influenced in his translation by his knowledge of the writings of al-Nawawī, whom he quotes to the effect that in the Hejaz as in Cairo the "circumcision of girls is the universal rule."⁵ This is in accordance with the *Fatāwā 'Alamgīrī*, which states, not only that the circumcision of females was allowed, but that it is commonly practised in Arabia,⁶ and both these accounts agree with Niebuhr's report written 500 years after that of al-Nawawī that girls are

¹ *Op. cit.*, vol. vi, p. 103, l. 5; other references will be found in the same volume, p. 152, l. 26, and in vol. xix, p. 59, ll. 11 and 12.

² *Nakā 'īd*, ed. Bevan, vol. i, p. 230, l. 6. The passage is interesting in that it suggests that hypertrophy of the clitoris was not unknown in mediæval Arabia. It seems to have been sufficiently common in Egypt for the College of Cardinals *de propaganda fide* to accept it as a valid reason for a rite which their missionaries had at first prohibited on account of its imagined Judaising purpose (Bruce, *Travels*, &c., Bk. V, Chap. 12). Lane (*Arabic-English Lexicon*, art. تَهَنُّت) suggests that the condition is by no means uncommon in Arabia and Egypt at the present day.

³ Burton, *Arabian Nights*, vol. v, p. 279.

⁴ Professor Arnold writes: "I have looked up several editions of the Arabic text of the *Arabian Nights* (e.g., that of Balāq, 1250 A.H., vol. i, p. 649), Cairo, 1306 A.H. (vol. ii, p. 273), and Calcutta, 1839 (vol. ii, p. 565), but in none of them is there any authority for Burton's translation that the Christian damsel was circumcized. The correct translation is 'She became a Muslim and purified herself, and he taught her how to pray.' The word for 'she purified herself' (تَهَنَّتْ) is *tatahharat* and merely means that she made ablutions, purified herself by washing. It is true that the second conjugation (تَهَرَّ) *tahhara* is used in the sense 'he performed the rite of circumcision upon somebody, and so purified him'; but I can find no warrant for the fifth conjugation (تَهَيَّرَ) being used in connection with circumcision; in the feminine (as here) it generally refers to a woman washing herself after the menstrual discharge. Moreover, I am inclined to doubt whether the circumcision of women was practised in the society to which the stories of the *Arabian Nights* refer."

⁵ *Pilgrimage to Al Medinah and Meccah*, Memorial Edition, 1893, vol. ii, p. 20, footnote. He also states that to call anyone *ibn-al-baṣra*, "son of an uncut mother," is a sore reproach.

⁶ *Op. cit.*, vol. iv, p. 237, quoted by Hughes, *Dictionary of Islam*, 1895, p. 57. This work is a collection of legal decisions according to Mohammedan law, drawn up by order of the Emperor Alamgīr (Aurangzīb, 1659-1707).

circumcized at Mokha though not in Sanaa.¹ Moreover, Hurgronje, writing of Mecca at the present day, says that clitoridectomy is performed quietly without any ceremony,² and Jaussen notes that the custom occurs but is not universal among the Arabs of Moab.³

It is said⁴ that every girl in Oman submits to operation at least in Sohar and at Baghdad, while Chardin⁵ records that both sexes are regularly circumcized on the Persian Gulf, whereas inland in Persia fewer women are circumcized than males. Further east Niebuhr speaks of the rite being practised by Arab women at Cambay near Surat—one of the oldest ports of India—while at the present day a mild form of the operation occurs among the Malays of Sarawak, who no doubt learnt it from the mediæval Arabs, to whom they owe Islam and the characters in which their language is written.⁶

Returning to Africa, mutilation appears to be absent in North Africa in the region of Berber influence, but is said to occur among the Tuareg.⁷ If this information is correct it is not without significance that the Tuareg, who still lead a semi-nomadic existence and have female descent, are socially perhaps the least modified of the Hamitic peoples of North Africa. Infibulation is universal in Darfur and Borgu; it is also said to occur among the Tibbu though not among the inhabitants of Bornu.⁸ Perhaps it does not pass west of Borgu or Wadai, but clitoridectomy certainly occurs among the Ful and the Mandingo,⁹ and also among such Negroid but not Negro-races in the French Sudan as the Toucouleurs, the Ouassoulonka and the Kassonka.¹⁰

Mutilation exists on the west coast among the natives of Sierra Leone, Benin, Akra, Old Calabar, and Loango;¹¹ some of these people are not full-blooded Negroes but Negroids with a varying and sometimes very considerable amount of Hamitic blood in them. Where this is not the case or cannot be stated with certainty there is still the question of foreign cultural influence to be considered. How thoroughly Central and West-Central Africa is permeated with this influence is as yet scarcely appreciated, but evidence in this direction is rapidly accumulating and I have elsewhere in this paper referred to the noteworthy fact that Wester-

¹ C. Niebuhr, *Description de l'Arabie* vol. i, p. 113 (Paris, 1779).

² *Mekka*, vol. ii, p. 142.

³ *Coutumes des Arabes au Pays de Moab* p. 35 (Paris, 1908).

⁴ Niebuhr, *loc. cit.*

⁵ *Voyages en Perse* x, p. 76 (Amsterdam, 1711).

⁶ See *Baluchistan Census Report*, 1911, p. 106, *Bombay Census Report*, 1911, p. 120, *Rajputana Census Report*, 1911, p. 154.

⁷ H. Sarrazin, *Races Humaines du Soudan Français*, p. 189, writes: "Nous nous sommes laissé dire que l'infibulation était pratiquée sur les jeunes filles en bas âge. Elle consisterait à trancher légèrement les nymphes et à les maintenir rapprochées pour en obtenir la soudure; on ne ménage qu'une légère ouverture. C'est plus tard un gage de virginité pour la jeune fille qu'on peut libérer, au moment voulu, par une incision longitudinale."

⁸ My information concerning Darfur, Borgu, Tibesti and Bornu was obtained from headmen of those settlements of pilgrims (generally called Fellata or sometimes Tekrari) from West-Central Africa that are to be found at so many centres upon the chief routes leading to the Red Sea ports.

⁹ L. H. Gray in Hastings' *Encyclopædia*, art. "Circumcision."

¹⁰ Sarrazin, *op. cit.*, pp. 240, 263, 288.

¹¹ L. H. Gray, *loc. cit.*

mann states that the languages of a number of tribes in the neighbourhood of the Nile-Congo watershed all show evidence of a more or less foreign influence of the type commonly called Hamitic.

Turning to the half-Hamites, mutilation, but not infibulation, is the universal practice and has been described among the Masai,¹ the Nandi,² the Suk,³ and the Wanderobbo,⁴ besides occurring among a number of Bantu-speaking tribes of Eastern Africa such as the Akamba⁵ and the Akikuyu.⁶ As far as is known the Nilotes do not mutilate their women,⁷ in this they resemble the great lacustrine tribes, the Bahima, the Banyoro, the Baganda, and the majority of the Southern Bantu, though the rite has been recorded among the Bechuana.⁸

It will be admitted that the geographical distribution of "mutilation" fully bears out the contention that the custom is not originally Mohammedan or even Arab, for there can scarcely be more question of Mohammedan or recent Arab influence having been exerted upon such tribes as the Masai and the A-Kamba than upon the ancient Egyptians. But since the rite existed in ancient Egypt, and is found at the present day over so great a part of Africa east of the Nile, existing both in modern Egypt and among such untouched tribes as the half-Hamites of British and German East Africa, and also in Arabia, it follows that the custom must be either indigenous or due to physical or cultural contact with a people who practised it and at one time or another, directly or indirectly, exerted their influence over the whole of the area under consideration. Now in the present state of our knowledge there is nothing to suggest that at any time a single indigenous culture prevailed over the whole of this area, so that whether or no the custom dates back to a period of undifferentiated Hamito-Semitic culture in the north, and is an offshoot of this culture in the south, it can be due to no other cause than the influence (direct or indirect) of this culture. Lest this suggestion be considered fanciful or over bold I may refer to the avoidance of bringing milk and meat into contact, which has led to elaborate ritual observances among the half-Hamites and kindred peoples (*infra*, pp. 656 and 657) and among the Jews. For whether the prohibition "to seethe a kid in its mother's milk" (Exodus xxiii, 19, and xxxiv, 26) refers to this avoidance or not, the more pious Jews of both Europe and Palestine⁹ still diligently observe the Law in this respect, and take the greatest

¹ A. C. Hollis, *The Masai*, p. 299.

² A. C. Hollis, *The Nandi*, pp. 57-60.

³ M. W. H. Beech, *The Suk*, p. 21.

⁴ Max Weiss, *Die Völkertämme im Norden Deutsch-Ostafrikas*, p. 401.

⁵ C. W. Hobley, *Ethnology of the A-Kamba and other East African Tribes*, pp. 68 et seq.

⁶ W. S. and K. Routledge, *With a Prehistoric People*, p. 164.

⁷ This is certainly true of the Shilluk, Dinka, and Bari; although I do not know of any evidence suggesting that the custom exists among the less well-known tribes, it would be unwise to be dogmatic.

⁸ James Chapman, *Travels in the Interior of South Africa*, pp. 44, 45 (London, 1868).

⁹ W. M. Thomson (*The Land and the Book*, 1888, p. 95) says: "They [the Arabs of Palestine] select a young kid, fat and tender, dress it carefully, and then stew it in milk generally sour, mixed with onions and hot spices such as they relish. They call it *leb n immá*—

trouble to avoid the mixing of meat and milk or butter either in their cooking vessels or in their stomachs. Apart from Merker's suggestion, now generally discredited, of Semitic influence on the Masai,¹ there can scarcely be any question but that here is a survival among Jews and half-Hamites of a custom going back to a common culture. It is noteworthy that a view somewhat akin to that put forward here was held by Maimonides who, writing in the twelfth century, boldly suggested that the existence of this custom in Judaism could only be due to the persistence of foreign and pagan influence.² Moreover, linguistic evidence cannot be neglected; after years of discussion as to whether Egyptian was or was not a Semitic language, or showed Semitic influence, it now seems determined that ancient Egyptian (and therefore modern Coptic) is in fact a pre-Semitic, *i.e.*, a Hamito-Semitic speech.³

If the view that mutilation is a survival from a period of undifferentiated Hamito-Semitic culture be accepted, we may conjecture that the different grades of severity of the operation prevailing in the Sudan are merely local variants of the common widely spread rite, and that the operation has, on the whole, tended to become more and more severe as it was found that it assisted to safeguard the chastity of women. It is indeed probable that among the half-bred Semites and semiticized Hamites of Eastern Africa the preservation of chastity became the whole, or at least the avowed, object of the operation at a comparatively early date, as it is at the present day among the Mohammedan tribes of the Anglo-Egyptian Sudan.

Face Scars.

Before leaving the subject of lesions purposefully inflicted it may be worth while to say something concerning a custom which in the Sudan exhibits almost the same distribution as infibulation, and which I was at one time disposed to believe was, like the mutilation of the female genitals, an old-standing habit of considerable ethnic significance. The custom I refer to is that of scarring the cheeks, and is common to both sexes.

Cheek scars of one form or another are of almost universal distribution in the Sudan except among the Negroes, and even members of these tribes tend to adopt the custom when they come under Arab influence, while slaves, whatever their race, are always marked in this manner, generally with the same series of scars as those borne by their masters.⁴ Scars such as these are produced by fairly

kid in his mother's milk. The Jews, however, will not eat it. They say that Moses specifically forbade it. . . . They further maintain that it is unnatural and barbarous to cook a poor kid in that from which it derives its life."

¹ On this point cf. von Luschan, *op. cit.*, p. 248.

² *Jewish Encyclopædia*, art. "Milk."

³ Hestermann, "Sprachen und Völker in Afrika," *Anthropos*, vol. viii, 1913, p. 221.

⁴ Some tribes affect differences in the size, form or position of the scars borne by their members. A few tribes are said to mark themselves in such a way that their members are recognizable by their scars. I cannot say at first hand whether this is so, nor have I been able to obtain satisfactory information on this matter; if such cases exist they are far from being the rule, and, speaking broadly, cheek scars cannot be regarded as a form of tribal or clan badge in the Sudan at the present day.

deep incisions with a sharp knife, they heal cleanly as a rule, and as far as I know the cicatrices produced do not tend to hypertrophy, nor is any attempt made to increase their size by keeping the wound open, or by introducing foreign substances. Thus these scars differ entirely from those massive hypertrophied cicatrices produced by the women of some Congo tribes, and in the Sudan by the women of Dar Nuba,¹ though like all these they are, in most cases, avowedly produced for their æsthetic value; such at least is the reason very generally given in answer to inquiries.

The commonest form of cheek scar is three, rarely two, more or less vertical lines on the cheek below the malar bone or sometimes over the bone itself. Scars such as these are of universal occurrence among the Barabra, who cut them long and deep so that the resulting scar is comparatively coarse. The cosmetic result is, however, considered none the less admirable on this account, and two sets of scars are sometimes made for the avowed purpose of adding beauty and distinction to the face. Scars of much the same coarse character are common among the sedentary Arab tribes south of Khartum and among the Baqqara, indeed, my limited experience suggests that, broadly speaking, the more black blood the bigger the scar. The exception to this rule, if I am right in formulating it, is that in some tribes, *e.g.*, the Gawama, the men scarcely scar themselves, while the practice is universal among the women, to whom the scars are "as a golden ornament."

The Kababish and some at least of the kindred nomad tribes make smaller scars, indeed, these are often so much smaller and shallower that they may scarcely be noticeable in middle-aged men. It will be remembered that (as I have shown) the Kababish have a considerable amount of Beja blood in their veins, so that turning to the Beja it is not surprising to find that although the majority of these tribes scar, there is no uniform practice. Thus the Bisharin scar little if at all; many Hadendoa seem to think that cheek scars are of comparatively recent introduction, for even now not all the Hadendoa have them and the Amara scarcely scar at all. Moreover, though the women of the Nabtab, the aristocracy of the Beni Amer, scar their faces the men do not. It is then obvious that the practice is by no means universal among the Beja nor does it occur among the Somali, while inquiries showed that it seldom occurs in Arabia, or among such recent Arab immigrants into the Sudan as the Zebediya (Rasheida). It does, however, occur at Mecca and it appears to be a distinguishing mark of the inhabitants of that city and Medina.²

¹ Photographs showing scarifications of Nuba women will be found in my paper on the Nuba, referred to on p. 611.

² Robertson Smith speaks of these gashes as *tashrit* and says that they are the distinguishing mark of the inhabitants of Mecca (*Encyclopædia Britannica*, art. "Mecca," p. 951, while Burton (*Supplemental Nights*, IV, p. 153) says: ". . . both at Meccah and at Al-Medineh the cheeks of babes are decorated with the locally called "Mashali"—three parallel gashes drawn by the barber with the razor down the fleshy portion of each cheek, from the exterior angles of the eyes almost to the corners of the mouth."

Considering these facts and what has already been said concerning the prestige of everything Arabian, especially when connected with the holy cities, it appears probable, nay, almost certain, that the custom is derived from immigrant Arabs, and is not an ancient widely spread Hamitic custom.

— I cannot leave the subject of cheek scars without referring to the linear marks which are shown upon certain of the faces painted or carved upon a number of Egyptian monuments; thus, in the reproductions given in Lepsius' *Denkmäler* of the captives at Medinet Habu, the chief of the Libyans is shown with two obliquely placed lines suggesting cheek scars. As a matter of fact these lines are entirely unlike the marks upon the original monument, which starting from the side of the nose run outwards and only slightly downwards across the cheek, as is well shown in a photograph, for which I am indebted to Mr. A. G. K. Hayter, who has also made for me a series of careful sketches and notes concerning the representatives of other races mentioned in this paragraph. Lines essentially similar in character, in that they do not obviously represent the ordinary skin-folds of the face, occur in other drawings and in the original are quite clear upon the face of the captive Negro chief at Medinet Habu. In this engraving there are two lines which in character and position broadly resemble those upon the chief of the Libyans, but the captive Syrian (?) chief in the same tomb has two lines which fairly obviously represent the hollow below the eye and the cheek-fold.

Turning to the brilliantly painted figures on the tomb of Huy at Gurnet Marai, the face of one of the Negroes whose head appears among the horns of a number of cattle shows two black lines drawn upon it. These run across a brown or black cheek in a nearly horizontal line from near the angle of the mouth to the region of the angle of the jaw. Mr. Hayter points out that single and double lines upon other Negro or Negroid faces in this tomb obviously represent the cheek-fold and his sketches certainly confirm this view. Considering the facts just stated, and that representations of both Libyans and Negroes exhibit similar marks, which if they are not misplaced skin-folds can only be scars or lines of pigment, considering too the variety in lines described by Mr. Hayter for the Negroes in Huy's tomb, together with the absence of any historical record even suggesting that either people scarred their faces, it seems almost certain that the lines represented by the ancient Egyptians upon these and other faces are merely exaggerated and often misplaced representations of the normal skin-folds of the face.

It has been shown on physical evidence that the Beja are the scarcely modified representatives of an early Hamitic stock (known as the proto-Egyptian) and it has been suggested that certain practices still prevalent in the neighbourhood of the Red Sea may date back to less differentiated and even earlier culture than the proto-Egyptian. At this point it becomes a matter for legitimate inquiry to determine

to what extent it may be possible to recover the essentials of the social customs and religious beliefs of the early Hamites.¹

In pursuing this inquiry there are three main sources of information available, viz. :—

- (i) The traditional customs and beliefs and the present-day practices of the Beja.
- (ii) The customs and beliefs of the ancient Egyptians.
- (iii) The customs and beliefs of the barbarous tribes and peoples of Africa sprung from the mixture of Hamite and Negro or affected culturally by Hamitic influence.

I believe that the following subjects may be usefully investigated from each of these standpoints :—

- A.—Social and family organization.
- B.—Totemism and animal cults.
- C.—Customs connected with milk and cattle.
- D.—The importance of the placenta, especially of the royal afterbirth.
- E.—The belief in otiose high gods, associated with an active cult of the dead.
- F.—The cult of divine kings responsible for the production of rain, when the high god may assume the form of a rain god.
- G.—The position of the body in the grave.

Social and Family Organization.

In considering the manners and customs of the Beja it must be remembered that these tribes are now perhaps the most fanatical Mohammedans in the Sudan, and that consequently at the present day only such of their older usages have survived as are not contrary to the written word of the Koran. The majority if not all the Beja were, however, heathen during the lifetime of Makrizi (A.D. 1366–1442) and it was of these that he wrote :—“ They are nomads living in skin tents which they carry wherever they find grazing. Their genealogies are counted in the female line. Each tribe has a chief but they recognize no paramount. They have no religion. Property passes to the sons of sister and daughter to the prejudice of the son of the deceased. To justify this custom they say that there can be no doubt as to the parentage of the son or daughter of a sister and that these must belong to the family, whether their mother had gotten them by her husband or by another man. They formerly had a paramount chief to whom all the other chiefs were subordinate.”² Makrizi adds that the Beja had many

¹ It will be remembered that, as stated on p. 595, this paper is limited to the Eastern Hamites.

² Quoted by Quatremère, *Mémoires Géographiques et Historiques sur l'Égypte*, II, pp. 136–137 (Paris, 1811).

dromedaries and camels besides sheep and cattle innumerable which provided them with meat and milk. In another passage Makrizi speaks of the Beja as a people utterly irreligious and unintelligent. Both men and women go naked, having no other covering than a loin cloth and the majority of them lacking even this.¹

Here is a perfectly definite account of a pagan, nomad, pastoral people with matrilineal descent, living almost entirely upon the milk and flesh of their flocks. With the exception only of matrilineal descent, which has been given up owing to the introduction of Islam, and the wearing of Arab clothing, the picture drawn by Makrizi is that seen by any traveller in the eastern desert at the present day. Moreover, even a slight acquaintance with the people is enough to show that they retain indisputable traces of a former matriarchy. These are most obvious in their marriage customs as the following account will show.

Among the Hadendoa the bridegroom goes to his bride's village to be married and stays there from one to three years. The tent for the young couple is usually built some 60 or 70 yards from that occupied by the girl's parents, *i.e.*, at the least distance that the stringency of the rules of avoidance between son-in-law and mother-in-law renders convenient. Unless betrothed in infancy or childhood the young man is not supposed to see his maiden, and he should spend the time, which may be a week or less, that intervenes between the payment of the dowry and his marriage, with his own people. The framework of the tent and the furniture, especially the marriage-bed,² are provided by the bride's relatives who erect the dwelling, the strips of matting, which when sewn together form the tent, should be provided by the bridegroom. While living with his wife's people a man accompanies his father-in-law whenever the latter moves to new pasture, he should help him in all matters and in fact be to him as a son. For about the first month after marriage the bride spends her days in her mother's tent, meeting her husband only at night. During this time his food is prepared by his mother-in-law and sent to his tent.

There does not appear to be any strict rule that the first child shall be born among its mother's people, but it is obvious that under the conditions stated this must often occur. Yet if a woman does not bear a child for some years after marriage it is perhaps a matter of indifference, regulated by convenience, whether it is born among its father's or mother's relatives. A more stringent rule prevails among the Amara, who say that a woman must be delivered of her first-born in her mother's tent, or, if this is impossible, among her mother's people, and even if she has left them she will return when her

¹ *Op. cit.*, II, 167. In spite of this some of the Beja had embraced Islam and attained a modicum of civilization in Makrizi's time, for he speaks of the Hadareb as Moslems, and as wearing Arab costume (*op. cit.*, II, 156). This change seems to have affected the historian's estimate of their character, for he now speaks of them as being "generous and liberal."

² By marriage-bed is meant the large bed, called in Sudan Arabic *serir*, and held off the ground by four low supports at the corners. This is absolutely unlike the narrower higher *angareb*, shaped like a European bedstead, and commonly used by men when sleeping alone.

time approaches. The Nurab who, although they consider themselves strong enough to stand alone, have but recently ceased to call themselves Amara, follow the custom of the latter. The Bisharin custom resembles that of the Amara as does that of the Beni Amer. Among all these tribes the husband carries his wife away to his own people from one to three years after marriage, the Beni Amer, however, say that although this is what happens normally a woman has the right to decline to follow her husband, and that if she persists in this attitude her husband would have no other resource than to visit her from time to time, since he could not be expected to settle down permanently among her people. Thus a girl, even when married, remains an object of concern to her parents and her division, and her mother's opinions and desires do not cease to be of importance to the husband.

I may here refer to a feature of the social organization of the ancient Egyptians and certain African peoples of mixed Hamitic and Negro descent which there is every reason to believe is connected with matrilineal descent and which is probably a legacy of an old Hamitic practice, namely, the custom of brother-sister marriage in the royal family. It is so well established that this occurred in Egypt that it does not seem necessary to cite specific instances.¹ But it cannot be said that the fact that such unions occur among the powerful lacustrine tribes of Central Africa has received the attention that its importance warrants. These tribes, namely, the Bahima, the Banyoro, and the Baganda, are all totemic and observe the ordinary rules of clan exogamy, yet the Bahima marry their sisters and even have intercourse with their sisters married to others.² Again among the Banyoro, who trace descent in the male line, princes "might cohabit with princesses and have children by them, though . . . the couple necessarily belonged to the same totemic clan. . . . However this cohabitation was not marriage." "The rule," says Mr. Roscoe, "was for princes and princesses to live together promiscuously and not to regard each other as husband and wife, though the king might take a princess and keep her in his enclosure."³ He might even beget children by his full sister.⁴

The Baganda also trace their descent in the male line, except in the case of the royal children, who take their mother's totem as well as certain totems claimed by every prince and princess.⁵ Clan exogamy was strictly observed except in the case of the ruling prince, who, on his becoming king, was ceremonially married to one of his half-sisters, who shared with him the coronation ceremonies and the

¹ The evidence on this point in late historic times is discussed by Huth, *The Marriage of Near Kin*, pp. 35-38, who gives a genealogy of the Ptolemies; instances of its earlier occurrence will be found in Petrie's *History of Egypt*, cf. especially vol. ii, pp. 1, 40-44.

² *Journ. Roy. Anthropol. Inst.*, vol. xxxvii, 1907, p. 105.

³ From information supplied by Dr. Roscoe to Professor Frazer, cf. *Totemism and Exogamy*, vol. ii, p. 523.

⁴ Frazer, *loc. cit.*

⁵ J. Roscoe, *The Baganda*, p. 128; this connects brother-sister marriage with matrilineal descent.

official mourning for his predecessor. Yet this queen and any other princesses that the king might subsequently marry might not have any children, indeed, unless taken by the king, princesses were not allowed to marry, though it was common knowledge that they took what lovers pleased them. If they bore children both mother and child were promptly killed; this convention led to the systematic practice of abortion, nevertheless, it appears that from time to time princesses bore children whom they succeeded in passing off as belonging to someone else.¹

These examples all indicate that the custom of brother-sister marriage is something abnormal and foreign to the general life of the lacustrine tribes, if this were not so, there would scarcely be the steady determination that the royal daughters should bear no children. The custom must be due either to the survival of an ancient practice or to foreign influence, and it requires but little reflection to see that the latter is the correct explanation. The Bahima, whose divergence from the African Negro is noted on page 656, are an immigrant pastoral people who have occupied the territory of a sedentary agricultural population, the Bahero, who till the ground and do all menial work. The Banyoro are divided into two socially distinct groups, the one pastoral and the other agricultural. The herdsmen are the descendants of a nomadic race who have become more or less sedentary but they still despise the husbandmen and speak of them as peasants and slaves.² The Baganda are ruled by a foreign aristocracy; Mtesa who was king at the time of the discovery of the country was proud of his foreign ancestors, whose language he still spoke.³

Turning to the Nilotes it is found that although the Shilluk king does not formally or actually marry his sisters, in other details the Shilluk princesses are treated substantially as are the royal daughters of the lacustrine kingdoms. Thus, although the king's sons take many wives, his daughters must remain unmarried, the alleged reason for this being that it is unfitting that a royal daughter should marry a commoner, while she could not marry a man of royal blood since this would be incest. The prohibition of marriage does not extend to all intercourse; a king's daughter is allowed to select lovers as she chooses, and nothing is said so long as it is not publicly known that she has become pregnant; but if this were discovered she would be killed, as would also the man responsible for her condition. This, which until recently appeared to have been sternly carried out, led to the frequent production of abortion.⁴

Even if no further evidence could be adduced, in view of what has been said in the earlier part of this paper, there could be, I think, no hesitation in referring this foreign influence to the Hamites and admitting that the custom we are discussing not only runs parallel to that of the Egyptians but that it owes its

¹ Roscoe, *op. cit.*, pp. 82-85.

² Frazer, *op. cit.*, p. 514.

³ A. H. Keane (*Man, Past and Present*, p. 90) makes this statement on Stanley's authority.

⁴ "The Cult of Nyakang and the Divine Kings of the Shilluk," *Fourth Report of the Wellcome Tropical Research Laboratories*, vol. B. 1911.

existence among the Negroid tribes of Central Africa to the influence of that great race to which the predynastic Egyptians belonged. We thus reach the conclusion that brother-sister marriage was a widely spread early Hamitic institution. Nor were consanguineous marriages limited to the royal family, or even to the aristocracy, for the practice occurs among commoners in certain Galla tribes at the present day¹ and there is evidence that marriages between near relatives were by no means repugnant to the feelings of the Egyptian populace.²

Totemism and Animal Cults.

With the exception of a single passage in Makrizi,³ which possibly may be taken to indicate the existence of some form of animal cult, there does not seem to be any evidence suggesting that animals were associated with the social organization or with the worship of the pagan Beja, nor have any traces of animal cult been discovered among the Beja of the present time. Sacred animals, however, do exist among the pagan Hamites of Abyssinia, among them are the hyæna, the snake, the crocodile, and the owl,⁴ though there is no reason to suppose that these are totems. Among the southern Galla of British East Africa there is a well-defined tree cult. Great reverence is paid to the *yak* (baobab), milk being poured over its roots once a month, and a white thread being tied round the trunk or its branches, and once a year "they kill for it" (*wa-na-u-tindia*) a black sheep. They also honour the *woredé* and the *oda* (wild fig). Karayu is the name given by Krapf as the name of one of nine tribes of the Galla descended from one Wolab, but *kareyu* or *karayu* is also the name of a tree which the Karayu clan of the Wasanye will not cut down.⁵

The animal cults of ancient Egypt are so well known that it is not necessary to adduce specific instances; I may state, however, that careful study of the evidence leads me to regard the ancient Egyptians as definitely totemistic.

Among the Nilotes of the Sudan the Dinka and Nuer are the only people known to have a well developed totemic system, but animal cults exist among the

¹ Paulitschke, *Ethnographie Nordost-Afrikas*, I, p. 196.

² Mr. A. W. Gardiner gives a most interesting, though necessarily incomplete, family history of the time of Rameses III., *Zeitschrift für Ägyptische Sprache und Altertumskunde*, XLVIII, pp. 50, 51. In this it is recorded that two of the daughters of Setau, the high priest of Nekhbet, at El Kab were married to their paternal uncles. In the same journal (vol. I, 1912, p. 57) Sethe gives an instance of the probable union of father and daughter.

³ Quatremère, *op. cit.*, II, p. 26; nor does the passage in question clearly refer to the Beja.

⁴ Littmann, Art. "Abyssinia," in Hastings' *Encyclopædia of Religion and Ethics*, p. 57.

⁵ Miss Werner, to whom I am indebted for the above information concerning the cult of trees, writes that the relations between Wasanye and Galla require careful working out. The Wasanye she met spoke Galla and knew no other language, though they admitted they once had another which they say is that spoken by the Waboni. They have the same, or partly the same, clans as the Galla, but are by no means clear about the divisions into Iradid and Berietuma, nor do they know of any rule obliging each division to marry into the other (which the Galla strictly observe). Miss Werner did not believe their explanation that they were really a branch of the Galla, though they may have adopted clan names when subjugated by the latter, just as the Pokomo have since done.

Shilluk, and Nyakang, their semi-divine culture hero and first ruler, still appears among them in animal forms, while his sister Nikaiya or Nyakai lives in the Nile and is definitely associated with the crocodile.

In British East Africa the Jalu, one of the tribes of the Nilotic Kavirondo, inhabit the open hilly country to the north-east of the Victoria Nyanza and speak a language closely allied to Shilluk. Hobley describes them as totemistic, their word for totem being *kwero*, which recalls the word *kwar* applied by the Bor and Tain Dinka alike to their totem animals and their ancestors. The totemism of these people is, however, extremely aberrant in form, their *kwero* being considered malignant creatures whom it is praiseworthy to kill.

Among the half-Hamites the Nandi and Suk are certainly totemic. The former are divided into a number of clans, each having one, or occasionally two, totemic animals,¹ the latter also have a large number of totemic and exogamous clans.² Among the Masai totemism, if it exists, must be of a less obvious character than among the Nandi, for Hollis does not mention it, though he adduces facts which not only indicate animal cults, but so strongly suggest totemism that I have little doubt that these people are totemistic.³ A number of Bantu-speaking East African tribes who resemble the half-Hamites in physique and in many social matters are totemic, such as the Akikuyu⁴ and the Akamba.⁵

Customs connected with Milk and Cattle.

The Beja, the half-Hamites, and the Nilotes all have a large number of customs which have this in common, that they are connected with the chief product of their herds, viz., milk, or with the grass upon which they feed. I am inclined to think that love and veneration are not too strong terms for the feelings towards their cattle which I believe form the basis of that special regard for milk and grass which occurs under varied forms among many of the tribes that have a strong infusion of Hamitic blood, or who have adopted elements of Hamitic culture.

None of the Beja tribes with whom I am acquainted milk into a clay vessel or put milk into one of these, in spite of the fact that many of the Hadendoa make pots. Nor would it be permissible to milk into one of the modern tin bowls which Europeans have recently introduced into the country. Gourds and basket vessels, especially the latter, are considered the appropriate receptacles for milk, though skin vessels, *girba*, may be used. Nor may any man of the Bisharin,

¹ A. C. Hollis, *The Nandi*, pp. 1-11. In a single instance one of the totems is inanimate, the Toiyoi clan has as totem the soldier ant and rain.

² M. W. H. Beech, *The Suk*, p. 5.

³ A. C. Hollis, *The Masai*, pp. 307-308. There is no doubt as to the totemism of the Elgeyo and Kamasia tribes, which, if I understand him aright, Hobley considers to be branches of the Masai, cf. *The Akamba and other East African Tribes*, p. 157.

⁴ W. S. and K. Routledge, *With a Prehistoric People*, p. 22.

⁵ C. W. Hobley, *Ethnology of Akamba and other East African Tribes* (hereafter quoted as *The Akamba*), pp. 4-6.

Artega, and Hasa drink the milk he has himself drawn, whether the animal is his own property or not, until someone else has taken three sips. So strict is this rule that to say of a man *halab sherab*, "he milked [and immediately] drank," would be a sore term of reproach.¹ There are also customs concerning the cooking of milk which vary from tribe to tribe: thus the Beni Amer and Bedawib commonly cook their milk by dropping into it hot stones as it stands in one of the wide-mouthed basket-work vessels called in Arabic *umra*. On the other hand, the majority of Hadendoa will not cook milk, and in this the Artega and Ashraf resemble them. Among the Artega, Ashraf, and Hasa only men may milk camels or sheep, and these tribes despise the Arab Zebediya, recent immigrants from Arabia, for allowing their women to milk their animals. The Artega, Ashraf, and Hasa have few cows, and I do not know what general rules would be applicable to them. There are, in fact, few cattle in the southern part of the Beja country, and they are not held in high esteem. No doubt where they do exist they are a comparatively recent introduction,² and this probably accounts for the fact that an Artega who would milk camels and sheep joyfully would not milk a cow. Moreover, the Amara, who formerly had no cattle and have not many now, were said to look upon them with a certain contempt and compare them to hyænas. This feeling does not, however, prevent them milking their cows, nor do the Hadendoa make any difficulty in this matter. No menstruous woman drinks milk lest the animal from which it was drawn should suffer, and the Bedawib say that any infringement of this rule would render sterile both the woman and the animal from which the milk was taken; nor may a menstruous woman drink *semm* (butter). These prohibitions do not extend to parturient women, nor are they enforced against a homicide, nor is milk or *semm* avoided by mourners.

These facts all indicate that milk is not "common" (using the word in its biblical sense) among the present day Beja; it might, indeed, almost be called sacred or sacrosanct. This is also the attitude of the southern Galla in British East Africa, for Miss Werner informs me that the only legitimate receptacle for milk, which may never be boiled, is a basket-work vessel called *gorfa*, nor may the milker drink of the milk he has drawn without first handing the vessel to someone else; when this person has drunk his fill, the milker himself may drink.

¹ *Halab sherab* is Arabic, I believe that in the Tigre language, spoken by the Beni Amer, the equivalent would be

| | | | | | |
|--------------|-------------|--------------|---------------|------------|----------------|
| <i>Egale</i> | <i>nosu</i> | <i>halba</i> | <i>kasata</i> | <i>iti</i> | <i>tabaitu</i> |
| So and so | himself | milks | drinks | (relative | sucks |
| | | | | pronoun) | |

i.e., So and so draws milk and drinks like a suckling.

² The prestige of everything Arabic (as opposed to things African) has already been noted. Strange as it may seem, this feeling extends to cattle, which are more African than Arabian in their association, doubtless because the dry climate of Eastern Arabia is unsuited to them. So it comes about that the Zebediya have camels and sheep and goats, but no cattle. On the other hand, some of the Beni Amer in the neighbourhood of the Eritrea frontier have promising herds of cattle.

Among half-Hamites there are numerous ceremonial observances connected with milk. Gourds are the only vessels in which it may be received or stored. Milk may not be boiled, nor may those that are suffering from wounds or sores drink it. Meat must not be taken for twenty-four hours after drinking milk, or, if meat has been eaten, milk must be avoided for twenty-four hours, and even then must not be taken until some salt and water has been swallowed. If no salt can be obtained, blood may be substituted. Moreover, there are certain animals which should not be eaten if it is possible to obtain other food. A Nandi having partaken of the flesh of one of these animals may not drink milk for at least four months, and then only after having taken a strong purge.¹

Masai warriors (*il-moran*) will not partake of milk on the same day as meat, always taking a strong purgative before they pass from one diet to the other, so scrupulous are they to avoid bringing milk and flesh or blood into contact. These rules no longer hold when the warrior passes into the next age-grade, that of elder (*ol-moruo*).²

The Suk agree that no one would be killed in a hostile kraal if a woman of the kraal poured milk upon the raiders, while a mixture of blood and milk drunk by the claimant to stolen property or other witness will cause the death of a liar.³

The Dinka (Shish) have a number of observances connected with milk. Cows should be milked by boys and girls before puberty; in case of necessity a man might milk a cow, but this is not a desirable practice, nor should old men do so even when they are past sexual relations. Menstruating women may not drink milk, though puerperal women may, and although milk is sprinkled upon the graves of the rainmakers, who are killed ceremonially in their old age, the near relatives of a dead man may not touch milk during the first few days after the death, *i.e.*, during the time that they sleep near the grave. This sacred or uncommon character of milk extends to a number of Central and East African Bantu-speaking tribes in whose veins runs much Hamitic blood or who are ruled by a foreign (Hamitic) aristocracy. This is specially the case among the great lacustrine tribes, the Bahima, the Banyoro, and the Baganda. Although all three speak Bantu dialects there is far less dark blood in the Bahima than in any other Central African tribe. Photographs show how unlike the Negro are some of the members of this tribe, whose physical characters are thus described by Frazer. "They are a fine tall race with spare, lithe figures, shapely heads, straight well-carved noses, high foreheads, and thin lips. The neck is long and graceful, which gives the head a light easy poise, very different from that of the Negro with his squat neck. Their complexion, too, is far less dark than his; indeed, it is sometimes a pale or reddish yellow. Their deportment is dignified. In appearance they differ absolutely from the Negro type, and in character they are equally distinct from most Bantu-

¹ Hollis, *The Nandi*, pp. 21 and 24.

² J. Thomson, *Through Masai Land*, pp. 429-431, 443. Cf. also Hollis, *The Masai*, xvi, 317.

³ M. W. H. Beech, *The Suk*, pp. 25, 28.

speaking peoples, their uniform apathy, listlessness, and unruffled calm contrasting strongly with the excitability, rapid utterance, and furious gesticulation of other African races. The Muhima (singular of Bahima) is never in a hurry. Pride is the keynote of his character; his ancestors conquered the country some generations ago and he inherits the tradition of the dominant race. All menial labour is done by his slaves, the Bahero or Bairo, who till the ground, build huts, and carry water for their lords and masters. The only occupation which the Muhima deems worthy of him is the tending of the cattle. He loves the huge-horned beasts, which, sometimes vicious with other people, are gentle and docile under his care. He pets them, talks to them, coaxes them, weeps over their ailments, and sometimes commits suicide when a favourite animal dies."¹

Only the men milk the cows, whose produce is not allowed to stand after noon or to turn sour, and it is not lawful to boil milk or for a menstruous woman to drink it.² These folk go even further than the Masai in those customs whose object it is to avoid bringing into contact milk and other foods; thus it is strictly forbidden to eat vegetables and drink milk at the same time, nor may meat be mixed with milk, hence milk is drunk in the morning and beef eaten at night.

The Baganda³ and the Bunyoro observe somewhat similar customs as regards milk, but in addition the latter keep a special herd for the king's use and a complicated ceremonial described by Frazer was enacted thrice a day when the king drank milk.⁴

Among the A-Kamba, a Bantu tribe living to the south of Mount Kenia between the Tana River and the Uganda railway, there is "a special curse used for a bad wife, the husband draws a little milk from her breast into his hand, and then licks it up, this is a curse which has no palliative, after it the husband can never again cohabit with the woman."⁵ I venture to think there can be little doubt as to the significance of this ceremony, especially when it is remembered that in the Hamitic area it is not infrequent for foster children to be looked upon as related to each other in the same degree as blood relations. Thus milk affords as valid a bond as blood, and the ceremony just described can only mean that the husband purposely makes himself of one blood (milk) with the woman and thus cuts himself loose from her for ever.

Among some Gallas and half-Hamites grass is of the same sacred character as milk. Major H. Darley informs me that some Gallas round Gore in Western Abyssinia throw grass towards a lion; this is perhaps only a special example of their habit of throwing grass into the air as a sign of peace, a custom which also

¹ *Totemism and Exogamy*, vol. ii, p. 533. Photographs of the Bahima of German East Africa are given by Max Weiss, *Die Völkerstämme im Norden Deutsch-Ostafrikas* (Berlin, 1910). These seem to show that Frazer's description is not quite of general application, though it agrees well enough with a number of Weiss' figures, especially those of the aristocracy.

² Frazer, *op. cit.*, p. 534.

³ Roscoe, *The Baganda*, pp. 417-419.

⁴ Frazer, *op. cit.*, pp. 526-528.

⁵ Hobley, *The A-Kamba*, p. 105.

obtains among the Masai.¹ Grass is also of religious importance to the Nandi.² No doubt in all these cases the explanation is to be found in the feeling voiced in the Masai saying: "God gave us cattle and grass, we do not separate the things which God has given us."³

The Importance of the Placenta, especially of the Royal Afterbirth.

As might be expected there are no records concerning the treatment of the placenta among the ancient Beja, but it is clear that their modern representatives attach considerable importance to the afterbirth. Before proceeding to give the data which justify this statement it will be convenient to refer to the practice in Ancient Egypt. With Miss Murray I have shown that an object having the shape of the placenta occurs as a cult-object upon Egyptian monuments from proto-dynastic to Ptolemaic times, and that its conventionalized form is called the "Inner Thing of the King," or "The Royal Child"; moreover, there is always the closest association between the king and the cult-object.⁴ There can then be little doubt as to the importance of the afterbirth in Egypt, and the examination of the evidence suggests that the placenta was regarded as the double, physical or spiritual, of the infant it had nourished.

Returning now to the Beja, the coastal Bisharin hold that it is important for the future welfare of the child that the afterbirth should not be eaten by dogs or birds, it is therefore thrown into the sea or placed in a tree and watched for some days. Probably they ensure its safety by some such method as that employed by the Hadendoa, who enclose it in a basket and tie it in the branches of a tree if they cannot throw it into the stream. The Artega treat the afterbirth in the same way, but some of the Beni Amer bury it some little distance in front of the door of the tent, place a camel saddle over the spot and leave it there for seven days and then, after removing the saddle, they kill a sheep on the spot and make a feast.⁵ Considerable importance seems to be attached to the placing of the camel saddle over the placenta, for it was said that if the father did not himself possess a saddle he would borrow one for the purpose.

Among the Arab tribes of the Sudan there are a number of customs which indicate that considerable importance is attached to the placenta. The Dar

¹ Hollis, *The Masai*, p. 289. Other customs concerning grass are given upon pp. 290 and 350.

² Hollis, *The Nandi*, pp. 74, 77, 78, 85.

³ Hollis, *op. cit.*, p. 290.

⁴ "Note upon an Early Egyptian Standard," *Man*, 1911, 97.

⁵ This feast was called by the Arabic name *karama*. I do not know how much stress should be laid on the use of this word. Properly it signifies a feast given with pious intent, at least some of which is distributed to strangers and the poor. Sacrifices made at graves and after dreaming of a deceased parent are *karama*. The importance in the present instance of the exact connotation of the word did not occur to me until after I had left the Sudan, but if my informant used the word with its proper significance in his mind, the ritual character of the treatment of the placenta is enhanced.

Hamid, an important sedentary tribe of northern Kordofan, bury it at the threshold and thrust a green branch of *heglík* into the ground above it. The Gawama bury the placenta in the same way, but the leaf of the *dom* palm is used instead of the *heglík* branch.¹ Mr. MacMichael informs me that among some of the Arab tribes of the Blue Nile District, including the Batahin, the placenta is buried at the threshold with corn, date stones, and a fragment of woven stuff, for preference silk, a palm leaf being thrust into the ground in the usual way. I may conclude this subject by pointing out that I have elsewhere recorded the erection of a shrine over the afterbirth of a saint among a population predominantly composed of Barabra.² This occurred at Bara in northern Kordofan.

Among the Bahima of Ankole who form the Hamitic aristocracy of a Bantu state, the placenta is buried under the threshold, the hole dug to receive it being lined with sweet smelling grass.³ Mr. Roscoe does not mention whether the graves of adults which are dug in the cattle kraal are prepared in this way, but clearly the position in which the afterbirth is buried, as well as the preparation of its "grave," alike show the importance that is attached to it.⁴

Among the Nilotes the maximum amount of Hamitic blood is probably to be found among the Shilluk, and, as already mentioned, men with well formed noses, thin lips, long faces, and high foreheads are by no means uncommon among them. The Shilluk king has a large number of wives, but none of them bear their children in the royal village, for each is sent when pregnant to some other village, where she stays until her child is weaned. Just as the afterbirth of every Shilluk is buried near the hut in which he is born, so the afterbirth of the royal child is buried in that village, where he will live and ultimately be buried, while there was a time before the rise of the present capital, Fashoda, when custom dictated that a prince who succeeded to the throne should make the village in which he was born the capital of his kingdom.

The Dinka bury the afterbirth outside but near the walls of the tukl; among the Shish tribe in the neighbourhood of Shambe the afterbirth is washed and then wrapped in a skin, usually I believe an old garment, in which it is buried. When the child is old enough to understand he is shown the place where his afterbirth was buried, and he will remember this as he grows up. The special interest attaching to this information is that a skin—that of the animal killed at

¹ It is worth noting that at Qurneh, near Thebes, a leaf of the date palm projects from each of the more recent graves in the modern cemetery, its avowed object being to enable the soul of the deceased to find its proper grave. In view of the other evidence adduced, I find it difficult not to connect the two customs.

² In an article contributed to *Essays and Studies presented to William Ridgeway*.

³ J. Roscoe, "The Bahima," *Journ. Roy. Anthropol. Inst.*, vol. xxxvii, 1907, p. 106.

⁴ The importance of the threshold is discussed by Professor Frazer in a paper, "Folk-Lore in the Old Testament," in the volume of *Anthropological Essays presented to Sir E. B. Tylor, etc.* As noted by Professor Frazer, "the afterbirth is supposed by many peoples—for example, by the Baganda—to be a personal being, the twin brother or sister of the infant, whom it follows at a short interval into the world" (*op. cit.*, p. 172).

the funeral feast—is used to wrap the body of a man before he is laid in his grave. Probably this is the custom among the majority if not among all the Dinka tribes, it certainly applies to the Agar and the Shish.

Striking as these examples are, they cannot compare with the conditions found among the Baganda, a Bantu people, with kings of predominantly Hamitic blood, among whom the belief in the importance of the placenta was carried to a pitch which, as far as I am aware, is found nowhere else in Africa. Even among commoners the afterbirth was called the second child, and was believed to have a spirit which at once became a ghost, and attached itself to the stump of the umbilical cord (*mulongo*).¹ For this reason the umbilical cord of a prince was treated with the greatest reverence. "On the birth of a prince the umbilical cord is dried and preserved, placed in a pot which is made for its reception, and sealed up; the pot is wrapped in bark cloths and decorated with beads, in olden times with various seeds which resemble beads; this is called the *mulongo* (twin), and has a house built for its abode in the enclosure belonging to the Kimbugwe, the second officer in the country, who takes his seat in all the councils of the state with the Katikiro (Prime Minister). The umbilical cord of the king was decorated and treated as a person. Each new moon, in the evening, it was carried in state, wrapped in bark cloths, to the king, and the Kimbugwe, on his return, smeared the decorated cord with butter, and left it in the moonlight during the night. It was looked after by the Kimbugwe until after the king's death, when it was placed in a special shrine or temple called *maloto*, with the king's jawbone, *lwanga*, which is spoken of as the 'king.' The two ghosts, the one of the placenta attached to the *mulongo* and the other of the dead king attached to the *lwanga*, were thus brought together to form a perfect god, to whom offerings were made in the *maloto*. The *maloto* or temple is entirely different from the tomb in which the king's body is laid; indeed, the *maloto* is built some months after the tomb, often, it appears, at a considerable distance from the latter. The *maloto* is kept in repair by the state, while the interior and enclosure are looked after by some of the widows of the deceased king. Within the *maloto* is a dais, covered with lion and leopard skins, and protected by a row of brass and iron spears, shields, and knives; behind this there is a chamber formed by bark cloth curtains; here are kept the *lwanga* and *mulongo*, to which the spirit of the dead king is attached, but they are placed upon the dais, when the departed king wishes to hold his court, or for consultation on special occasions."²

The Belief in Otiose High Gods, associated with an Active Cult of the Dead.

Knowledge of the religion of the pagan Beja is almost entirely lacking, and, as far as I can ascertain, Egyptian records supply no clue. The earliest mention of the Beja (Blemmyes) is made by Roman historians, who state that in the third

¹ Roscoe, *The Baganda*, p. 54.

² Seligmann and Murray, "Note on an Egyptian Standard," *Man*, 1911, 97.

century A.D. they took advantage of the decline of the Roman power to ally themselves with the Palmyrenes and invade Egypt A.D. 268. The allies seem to have dominated the country for a few years, and even the defeat of the Beja by Probus only checked their inroads temporarily. Some eighty years later, when the Roman Government was re-established, one of the conditions upon which peace was made was that the Beja should be given permission to visit the temple of Isis at Philae, to borrow her statue and take it into their own country for worship.¹ These rights were not withdrawn until the reign of Justinian, who, by ordering the destruction of the temple, seems to have removed the one object in Roman territory that the Beja really respected, and thus occasioned renewed raids. It is impossible to say how long the worship of Isis persisted, or whether the "idol" of which Makrizi and others make mention represented this goddess, but Procopius² states that the Beja worshipped Isis, Osiris and Priapus, and offered human sacrifices to the sun. Moreover, it is recorded in the Life of St. Pachomius³ (*ob.* 346) that the Beja carried off a monk from the neighbourhood of Panopolis and forced him to worship their "idol." These few statements suggest that the religion of the pagan Beja in essentials may have resembled that of Egypt, but though probable enough it would scarcely be safe to press this view.⁴ There is no hint of the cult of those animal gods that so impressed the Greek and Roman historians of Egypt's decadence. On the other hand, the system of shamanism described by Makrizi suggests the existence of ancestor-worship. "These Beja [of the desert of Aidab and Aloa] . . . are still given to idolatry . . . following their priests in all things. Each family has a priest who erects a tent of skins in which he practises his vocation. When consulted he strips himself and enters the tent backwards. He comes out behaving as a maniac or epileptic and says: The spirit salutes you and advises you to give up a particular journey for such and such a tribe is about to attack you. . . . When they determine to move their encampment, the priest loads the tent of which I have spoken on the back of a camel which bears no other load. They allege that this animal rises and travels as if heavily laden, and that it sweats profusely although the tent is absolutely empty."⁵

The pagan Galla believe in a high god called Wak,⁶ who, as Miss Werner states, is not clearly distinguished from the sky; nevertheless, Wak is frequently addressed in prayer, and Miss Werner considers that more worship is paid to Wak than to the ancestral spirits. The routine worship of the recent ancestors is somewhat as follows:—A bullock is sacrificed on the grave on the day of burial

¹ *A History of Egypt*, vol. v, p. 100.

² Quoted by Quatremère, *op. cit.*, vol. ii, p. 133.

³ Quatremère, *op. cit.*, vol. ii, pp. 130, 131.

⁴ It is possible that the adoption by the Beja of Egyptian deities may have been late.

⁵ Quatremère, *op. cit.*, pp. 152, 153.

⁶ Littmann, *loc. cit.* Miss Werner informs me the correct name is Wain, of which Wak is the genitive.

and eaten by the grave-diggers. Some time later another bullock is killed and all the dead man's relatives are invited to the feast, which is held in a shed specially built for the purpose. Probably this marks the end of the period of mourning. It is customary for anyone who passes a grave to put some tobacco upon it.

The Barea and Kunama, who, according to Munzinger, exhibit no traces of degenerate Christianity such as is found among the Bogos, recognize one god who is lord of the universe. Yet he is not worshipped, nor has he any dealing with mankind. The cult of the dead seems to be of more importance, a special festival is held in November after the harvest, which Munzinger speaks of as a feast of "thanksgiving, propitiation and remembrance of the dead."¹ Every household makes a quantity of beer, and a small pot is set apart for each dead member of the family for a couple of days, after which it is drunk by the living. It is a time of peacemaking, dancing and singing, and only after this feast may wild honey be collected.²

All those Nilotic and half-Hamitic tribes concerning whose religious beliefs we have definite information believe in the existence of a high god who, broadly speaking, concerns himself little with the affairs of mankind, the regulation of which is held to depend on man's own efforts, seconded by the spirits of the dead (*atiep* and *jok*), whose benevolent interest is invoked by prayer and sacrifice. Although totemic or other forms of animal cults exist in some of these tribes they do not seem to cause confusion; the totems are on a totally distinct plane to that occupied by the high god, while totemism fuses so readily and logically with the cult of the dead that the two beliefs do not exert any mutually disintegrative action, but rather reinforce and tend to perpetuate each other. Thus, among the Dinka, whose religious beliefs I have described at length elsewhere,³ the social organization is into a number of totemic clans, and although some of their prayers begin *Nyalich ko Kwar*, "God and our Ancestors," it is the latter that are feared, propitiated and invoked in the affairs of everyday life, and it is to them that shrines are raised, while in some cases in which appeal is made nominally to Dengdit the form suggests that he has been confused with the *jok*. Moreover, even the high god *Nyalich*, perhaps most often called Dengdit, is believed by the Niel Dinka to have ruled the tribe in human guise long ago, and the Adero clan of this tribe have the rain (*deng*) as their totem.⁴

¹ Munzinger, *Ostafrikanische Studien*, p. 473.

² Munzinger, *loc. cit.*

³ Hastings' *Encyclopædia of Religion and Ethics*, art. "Dinka," vol. iv, pp. 704-713.

⁴ The Niel Dinka say that the first ancestor of the clan appeared from the sky as a young woman pregnant with her first child. The people reverentially formed a circle round her, killed bullocks, and then rubbed her from head to foot with the belly fat. Next they built for her a hut without a door. Here, a month later, her child was born, and she called to the people, who brought cattle, which she told them to go and sacrifice. When they came back they found her nursing a marvellous babe with teeth like an adult, and tears of blood. Then the mother said to them: "This is your *bain*, look after him well, for I can stay with you no longer." As she spoke, the rain came down in torrents, and therefore the boy was called Deng (Rain) or

I may continue my brief review of Dinka religion by pointing out that important as is the part played by the ancestral spirits in the every-day life of man, they are not thought to be concerned in the giving of rain, this being a matter for Dengdit or Nyalich himself, who must be approached by the rainmaker of the tribe, who in each generation incarnates the spirit of the great ancestral rainmaker (*cf. infra*, pp. 671 *et seq.*).

Among the Shilluk there is a quite general belief that the spirits of the dead are everywhere, and that sometimes they come to their descendants in dreams, and help them if they are ill or give them good counsel, but this belief does not appear to have given rise to any cult of the dead comparable in intensity with that existing among the Dinka, its place as the working religion of the tribe being taken by the cult of Nyakang the semi-divine ancestor of their kings, in whom his spirit is immanent. The Shilluk think of Nyakang as having been human like themselves, and as having led them to the land they now occupy. He was the first of their kings and the ancestor of their royal house, though unlike his recent successors he did not die, but disappeared during a tempest. His holiness is especially shown by his position in relation to Juok the high god of the Shilluk, who made man and ordered all things. Juok is formless and invisible, and like the wind is everywhere at once. He is far above mankind and Nyakang, and does not concern himself with the affairs of every-day life. Nevertheless, certain of the sacrifices offered to Nyakang by the Shilluk king have no other object than to enable him to move Juok to send rain. Apart from the rain ceremony Juok is scarcely worshipped directly,¹ yet his name occurs in such common greetings as *yimiti Juok*, "May Juok guard you."

Practically nothing is known about the religion of other Nilotic tribes, but I found that the Shir, the tribe living immediately to the south of the Dinka (and not uncommonly confused with the Bari), have a god Long e Ke corresponding to the Dinka Dengdit, and a form of ancestor worship which resembles that of the Dinka. The ancestral spirits (*tilimut*) linger about the village and look after their descendants, but they also send sickness and must be placated with offerings.

Turning now to the half-Hamites, the Nandi have a supreme deity Asis, or Asista, identified with the sun, though, as noted by Sir Charles Elliot in his Introduction to Mr. Hollis' book, we "are led to suppose that he is a benevolent and powerful, but somewhat vague deity."² The cult of the dead is much more developed. The spirits of the deceased (*oiik*) protect their living kinsmen, but, as among the Dinka, they also send sickness and the spirit responsible for the disorder must be discovered and propitiated.

Dengdit (Great Rain). He ruled them for a long time and, when he was very old, disappeared in a great storm.

¹ Westermann (*op. cit.*, p. 171), however, gives a prayer to Juok having no reference to rain-making.

² *The Nandi*, p. xix.

It is less easy to summarise the religion of the Masai. Naiteru-Kop, "The Beginner of the Earth," who arranged the present order of things, seems a fair representative of the Nilotic and half-Hamitic high gods, but it cannot be said that there is any clear evidence of the part played by ancestral spirits.

The Suk believe in a vague Supreme Being who made the earth and is the universal father, whom most men call Torotut, "the Sky," but some Ilat, "Rain."¹ The account given of the death ceremonies suggests that the spirits of the dead play the same part as they do among the Nandi; some at least pass into snakes.²

Among the Bantu-speaking tribes of East Africa the Akamba recognize an impersonal deity Engai, or Mulungu, who lives in the sky, and a host of ancestral spirits, *Aimu*, who stand in the most intimate relation with the living.³

The Cult of Divine Kings responsible for the Production of Rain, when the High God may assume the Form of a Rain God.

The chiefs of the Dinka and the kings of the Shilluk are regarded as beings almost divine, upon whose correct conduct the preservation, or at least the welfare, of their people depends. In fact, they belong to that class of ruler to whom Professor Frazer applies the name Divine Kings, believed to incarnate the divine spirit, and who were periodically killed lest that spirit should suffer from its retention in an ageing body. Every Dinka high chief is killed in his old age, this being done at his own request with all ceremony and reverence. The Shilluk king was also slain by his subjects, nor was his death postponed until, in his old age, he felt that he had done all that he could for his people, but he was killed while still in vigorous middle age directly his wives complained that his generative faculties were weakening. The Wawanga, a tribe of Bantu-speaking Kavirondo of British East Africa, also kill their king, and there appears to be little doubt but that the king is a "semi-divine personage . . . first and foremost, a priest or medicine man. . . ."⁴ There is also a somewhat close resemblance between the rite as carried out by the Wawanga and the Shilluk. The custom of king-killing, in a somewhat modified form, is also found among the Banyoro, a people with a foreign (Galla) aristocracy. Their kings had to take their own lives while they were still in the full possession of their faculties and before their bodily vigour was impaired by the ravages of disease. "As soon as the king felt unwell and thought he was about to die, he called his principal chiefs, and, after discussing affairs of state with them in council he went to a private house, where only his chief wife was allowed to visit him. There he asked her for 'the cup,' the poisoned cup . . . and having received it at her hands he drained it and in a moment was dead. . . . If the king

¹ M. W. H. Beech, *The Suk*, p. 19.

² Beech, *op. cit.*, pp. 20 and 22.

³ Beech, *op. cit.*, pp. 85-90.

⁴ K. R. Dundas, "The Wawanga and Other Tribes of the Elgon District," in this Journal, vol. xliii, 1913.

faltered, or was too ill to ask for the cup, it was his wife's sad duty to administer the poison. His death was kept secret for a time. . . . The public announcement of the death was made by the chief milkman."¹

It remains to inquire whether there is evidence that at any time the Egyptian king was ceremonially put to death like the Dinka rainmakers and the divine kings of the Shilluk. It is obvious that nothing of the sort occurred in historic times, yet even at the height of Egypt's power ceremonies were performed which can scarcely be explained in any other way than that they arose at a remote time when the king was not allowed to die naturally, but, after a more or less definite period of office, was sent to Osiris by violence, accompanied by such high ceremonial as befitted so great an occasion in the nation's history.

The *sed* festival of ancient Egypt seems to be a survival of the custom of the ceremonial killing of the king. The essential point of the ceremony was the identification of the king, though still living, with Osiris the god of the underworld, with whom every pious Egyptian was united at his death. The oldest representation of the ceremony which has come down to us is that on the mace head of King Narmer. This shows the king as Osiris seated in a shrine at the top of nine steps and holding the flail commonly held by the god. At one side of the space in front of the king are a number of standards, the first of which is the jackal Upwawat, "the opener of the ways," described on the seal of King Zer as "he who opens the way when thou advancest towards the underworld." This seal shows King Zer as Osiris preceded by Upwawat and the ostrich feather, the emblem of lightness or space, called "the *shed-shed* which is in front," upon which the deceased was supposed to ascend. "Here, then," to quote Professor Petrie,² "the king, identified with Osiris, king of the dead, has before him the jackal-god, who leads the dead, and the ostrich feather, which symbolizes his reception into the sky."

Later discoveries do but confirm the suggestion that the great feature of the *sed* festival was the Osirification of the king. No doubt in historic and even in protodynastic times this apotheosis was ceremonial, the king was not killed but continued his reign as Osiris. Nevertheless, it is known that in two cases an Osiride figure of the deified king was treated as a dead king, no doubt in a sense regarded as having died at his *sed* feast. Mr. Howard Carter found buried in a pit at Thebes the seated figure of a king of the dynasty Mentuhotep, represented as clothed in a tunic coming down to the wrists, as in the Osiride figures of Pepi and other early kings.³ The other example is furnished by the remains found by Professor Petrie in a ruin on the summit of the highest hill of the desert plateau in the immediate neighbourhood of Thebes. These included a fragment of a seated figure of Sankh-ka-ra, a king of the eleventh dynasty, wearing a close-fitting garment coming down and covering the wrist, besides the remains of a sarcophagus

¹ Frazer, *Totemism and Exogamy*, vol. ii, pp. 529-530.

² *Researches in Sinai*, 1906, p. 183.

³ *Qurneh*, 1909, p. 6.

lid with many graffiti upon it. "We must then picture a cenotaph or imitation sarcophagus, with roll moulding, pilaster framing, and a separate lid with cornice, standing freely accessible in the chapel, where there is no trace of a well or tomb pit. And along with it was a seated figure in Osiride dress as worn at the *sed* festival. The limestone cenotaph was not merely a niche or shrine for the figure, or it would not have had a separate lid, well finished at the joint and rough underneath. That lid proves that a cenotaph sarcophagus existed, the inside of which was invisible."¹ It seems that this evidence, all pointing to the Osirification of the king, can have but one meaning, namely, that the *sed* ceremony represents the actual killing and burial of the king which regularly took place in prehistoric times, as it does among the Shilluk at the present day.

One other point may be mentioned as illustrating the close similarity in the Nilotic and Egyptian ceremonies. A representation of the *sed* festival discovered at Memphis in 1909 shows the stuffed or dried arms and chest of a man being carried behind the king. Professor Petrie suggests that these are the remains of a deified king "probably the relic of the king Osiris preserved in the Metelite nome . . . which were used in the investiture of the ruler from early times."² Further, "these arms were perhaps at first the actual dried arms of the Osiris-King. . . . In historic ages they were probably a cartonnage model of a chest and arms which were carried to the investiture, and laid on the shoulders of the new ruler to confer the virtue of the royal office."³

In support of the suggestion that the divine king may cease to be put to death and yet maintain his importance as priest-king I may refer to the *sim* or priest-king of the Bogos, a pagan tribe of Abyssinia with some 2,000 adult males, of whom about a third are Schmagilli, the descendants of one Gebre Tarke the founder of the nation, and constitute the ruling aristocracy. The Bogos are pastoral Hamites and are described by Munzinger as by no means African (Negroid) in type. Their skin varies in colour from pale yellow to black, their hair, though thick and coarse, is not woolly, and their features are finer and more regular than those of their Tigre neighbours.⁴ The *sim* is head of the whole tribe, his office descending in the direct line from father to first-born son, the *sim* succeeding to his new position of dignity after fasting in isolation in his hut and washing his whole body in the water with which his father's body had been washed. Munzinger describes the *sim* as sacred and inviolable, one whose office is

¹ *Qurneh*, 1909, p. 5.

² *Palace of Apries*, 1909, p. 10.

³ *Palace of Apries*, *loc. cit.* Consecration by means of the bodily remains of a great predecessor continued in Egypt to a much later period. Makrizi records that in the month of Shaban, of the year 821, the Venetians carried away from Alexandria the head of St. Mark. "The Jacobite Christians were sorely grieved by this theft, which they regarded as a disaster to their religion. For when the Patriarch was elected he proceeded to Alexandria, where this head was placed in his arms. They were indeed persuaded that without this ceremony his installation was not valid."—Quatremère, *op. cit.*, vol. ii, p. 262.

⁴ Munzinger, *Über die Sitten und das Recht der Bogos*, 1859, p. 68.

a sacrament ensuring a heavenly blessing, an anointed king without royal power, by which he apparently means temporal power, for he goes on to say that in other countries he would have become a real king and considers that only the jealousy of the pastoral nobility has prevented it here. The tribe gives the *sim* a state dress and its members appear to be jointly responsible for his comfort and food supply, while even if he be a poor man his blood is rated higher than that of the proudest noble. Considering that the religion of the Bogos shows traces of Christian influence and the advance in socio-political organization that has been made by the vast majority of the Abyssinian tribes, remembering too that Munzinger's work on the Bogos was concerned predominantly with their social organization and legal customs, it seems reasonable to regard the *sim* as a divine king, and perhaps a rainmaker, although like the priest-king rulers of the half-Hamites he is not put to death by his people.

Having indicated that the rulers of Egypt and the kings or chiefs of the Nilotes and half-Hamites belong to the class of Divine Kings, it remains to consider whether it can be shown that they are also rainmakers, that is to say, are they believed to control the weather so effectively that the due supply of water necessary to the country is dependent upon their actions? It will be seen immediately that there is no doubt as to this in the case of the Nilotes; it is almost as certain for the half-Hamites; but, when considering the powers of the Egyptian king, there are certain special circumstances which must be taken into consideration.

In the first place, Upper Egypt is a country in which rain falls at such uncertain intervals that it plays no part in the economy of the land, its place being taken by the inundation of the Nile. Secondly, our records of the earliest dynasts indicate that these had advanced farther on the road to civilization than any other Hamitic or partially Hamitic people in the African continent. Nevertheless, the great mace head of Hierakonpolis, dating back some six or seven thousand years, one of the earliest monuments upon which is portrayed the king of Upper Egypt, shows his majesty inaugurating irrigation works with a hoe of the pattern still in use. The scene is so interesting and suggestive that I may be allowed to quote Professor Petrie's description: "The main part of the mace is occupied with a record of public works performed by the king. The central figure is the king standing with a hoe in both hands. Before him is a man holding a basket for the earth, and beyond that there has been another man holding a bunch of ears of corn. Above these are the usual standard-bearers of the army, and immediately in front of the king's head is his title—the rosette, and his name—the Scorpion. Behind him are two fan-bearers, and the open country with growing plants. Beyond that is the end of a festal subject, which is the conclusion of the scene before the king. In the upper part are figures in palanquins. . . . Below them is a row of women with long hair, dancing.

"Below the king are represented the irrigation works which he is inaugurating. Two men are engaged in making the banks on opposite sides

of the canal; a third is running forward with a hoe; the attitude with bent knees . . . is drawn from the appearance of a man when running through long grass. Above him is a palm tree growing in an enclosure of reeds bound with cords, like modern Egyptian field-fences. By the side of that is the prow of a boat on the canal. At the bottom, across the canal, stands a hut built of reeds bound with cords. . . ."¹

There is a fifth dynasty inscription in Wady Maghara² which seems to refer to the king Ne-user-ra in his water-supplying capacity. The scene is divided into parts, on one side is the king smiting the enemy; on the other is an enormous water vessel on a stand supported on three $\frac{\circ}{\mid}$ (life) signs. On the vessel are the titles and name of the king, while above it are two inscriptions reading (i) "Lord of foreign lands" and (ii) "He gives cool water."³

There is a passage in the inscriptions of the temple of Redesiye⁴ in which Seti I. describes the digging of the well near which the temple was subsequently built, which suggests that it was the king only that could move "the god" to grant water, but I do not wish to lay too much stress upon this and similar passages⁵ since the common style in which the kings of Egypt record their acts lays continual stress on the close relationship existing between them and the gods. Perhaps rather more weight may be ascribed to the address of the court to Rameses II. upon the Kubbân stele, though even here the language is absurdly inflated. "If thou sayest to the water 'Come upon the mountain' the flood comes forth quickly after thy word, for thou art Re in limbs, and Khepri with his true form."⁶

Much better evidence is offered by the stele at Abu Simbel concerned with the marriage of Rameses II. with the daughter of the Hittite king, and this is confirmed by a poetic fragment in the Papyrus Anastasi. The inscription on the stele reads: "Then his majesty took counsel [for] the army with his own heart, saying: 'What are these newcomers like! When there goes not a messenger to Zahi in these days of flood on the upper [heights] in winter.' Then he offered an oblation for [—] and for Sutekh. Then he came [pray]ing, saying: 'Heaven is—and earth is under [thy feet]. That which thou commandest is all that happens. Thou—to make the flood and the cold upon the [heights] . . . which thou hast assigned to me, King Rameses (II.).' Then his father, Sutekh, heard every [word]. . . ."⁷

Though the language is obscure it is evident, as Breasted points out

¹ *Hierakonpolis*, vol. i, pp. 9-10.

² Lepsius, *Denkmäler*, vol. i, p. 152. I am indebted to Miss Murray for drawing my attention to this scene, as well as for her reading of the two inscriptions.

³ The village of Redesiye is on the Nile, about 5 miles above Edfu. The temple is in the desert, about 37 miles east of the modern village.

⁴ Such passages as "Behold the god has performed my petition and he has brought to me water upon the mountains."—Breasted, *Ancient Records*, III, 172.

⁵ Breasted, *op. cit.*, III, 288.

⁶ Breasted, *op. cit.*, III, 423.

(*loc. cit.* f.n.), that Rameses was disturbed at the difficulties his visitors would have to face owing to their travelling during the rainy season. He accordingly approached Sutekh with an offering to ensure good weather, just as Hatshepsu had made an offering for favourable weather to "Hathor, mistress of Punt," before the departure of the Punt expedition.¹

Moreover, the account in the Papyrus Anastasi makes the matter clear. The poet imagines the Hittite king sending word to the chief of Kode, presumably one of his vassals, bidding him prepare to accompany him to Egypt. The Egyptian king's power over the "water of heaven" is especially mentioned, and he is clearly regarded as the semi-divine or divine rainmaker.

"Equip thyself that we may proceed to Egypt,
That we may say: 'The behest of the god comes to pass.'
Let us make overtures to Rameses II., L[ife] P[rosperity] H[ealth],
For he gives breath to whom he will,
And every country lies at his disposition.
Kheta is in his power alone,
If the god accepts not his offering,
It (Kheta) sees no rain,
For it is in the power of Rameses (II.), L[ife] P[rosperity] H[ealth],
The Bull, loving valor."²

Taking all these statements into consideration there seems no reason to doubt that, seen from one aspect, the Pharaoh was the "water-expert"³ for his people, who recognized his power over the weather and logically extended this to the control of the "water of heaven" in those areas in which the rainfall was regular enough to be of importance. As far as I have been able to ascertain there is no record since the early dynastic period of the king inaugurating the irrigation of the land, but there can be little doubt that throughout the historic period the ruler of Egypt was associated with the ceremony which each year initiated the irrigation of the land in the neighbourhood of his capital. Makrizi writing of the time of the Arab conquest says that a virgin in gay apparel was thrown into the river as a sacrifice to obtain a plentiful inundation. 'Amr, the conqueror of Egypt, prohibited this custom, but even in Lane's time a truncated pillar or cone of earth called *aruseh* (the bride) was raised some little distance in front of the dam shortly before the date of the great ceremony. The *aruseh* was washed away by the rising waters, generally a week or fortnight before the dam was cut.⁴

¹ Breasted, *op. cit.*, II, 252.

² Breasted, *op. cit.*, III, 426.

³ Magicians supposed to have special control over particular aspects of nature are common among uncivilized peoples. Such men are in a sense departmental experts. Often, as among the Zulu-Kaffir and some half-Hamites (*infra*, p. 674), the expert is merged in the all-round magician or "witch-doctor," having well nigh universal power. No doubt such syncretism had occurred in the case of the Pharaoh, yet, in instances such as that just referred to, one aspect of his many-sided religious activities is isolated for the moment and considered as independent.

⁴ E. W. Lane, *Manners and Customs of the Modern Egyptians*, p. 500 (London, 1895).

Norden, writing in 1757, records how "the bashaw and his beys go with a grand retinue to the ceremony of opening the bank,"¹ while Lane refers to a small building of stone which had become a ruin in his time from which the grandees used to witness the ceremony, and he states that it was upon its site that the tent for the officials concerned in the ceremony was pitched.²

The following account taken from Lane's work shows the importance of this festival as late as the middle of the nineteenth century :—

"In the afternoon of the day preceding that on which the dam is cut, numerous boats, hired by private parties for pleasure, repair to the neighbourhood of the entrance of the Canal. Among these is a very large boat called the 'Akabeh' . . . painted for the occasion in a gaudy but rude manner. . . . It is vulgarly believed that this boat represents a magnificent vessel in which the Egyptians used, before the conquest of their country by the Arabs, to convey the virgin whom it is said they threw into the Nile. It sails from Boolák about three hours after noon, taking passengers for hire, men and women. . . . It is made fast to the bank of the isle of Er-Ródah, immediately opposite the entrance of the Canal. . . . In many boats the crews amuse themselves and their passengers by singing, often accompanied by the darabukkeh and zummárah; and some private parties hire professional musicians to add to their diversion on the river. . . . In the evening, before it is dark, the exhibition of fireworks commences, and this is continued, together with the firing of guns from the 'akabeh' and two or more gunboats, every quarter of an hour during the night. . . . The fireworks which are displayed during the night consist of little else than rockets and a few blue lights. The best are kept till the morning, and exhibited in broad daylight during the cutting of the dam. . . .

"Before sunrise a great number of workmen begin to cut the dam. . . . With a kind of hoe the dam is cut thinner and thinner from the back (the earth being removed in baskets and thrown upon the bank), until at the top it remains about a foot thick. This is accomplished by about an hour after sunrise. Shortly before this time, when dense crowds have assembled in the neighbourhood of the dam on each bank of the Canal, the Governor of the metropolis arrives, and alights at the large tent before mentioned, by the dam. Some other great officers are also present, and the Kádee attends and writes a document to attest the fact of the river's having risen to the height sufficient for the opening of the Canal, and of this operation having been performed: which important document is despatched with speed to Constantinople. Meanwhile the firing of guns and the display of the fireworks continue, and towards the close of the operation the best of the fireworks are exhibited, when in the glaring sunshine they can hardly be seen. When the dam has been cut away to the degree above mentioned, and all the great officers whose presence is required have arrived, the Governor of the

¹ F. L. Norden, *Travels in Egypt and Nubia*, p. 63 (London, 1757).

² Lane, *op. cit.*, p. 501.

metropolis throws a purse of small gold coins to the labourers. A boat, on board of which is an officer of the late Wálee, is then propelled against the narrow ridge of earth, and breaking the slight barrier, passes through it, and descends with the cataract thus formed. . . . Just as his boat approaches the dam, the Governor of Cairo throws into it a purse of gold as a present for him. The remains of the dam are quickly washed away by the influx of the water into the bed of the Canal, and numerous other boats enter, pass along the Canal throughout the whole length of the city, and some of them several miles farther, and return.

"Formerly the Sheykh el-Beled, or the Básha, with other great officers, presided at this *fête*, which was celebrated with much pomp; and money was thrown into the Canal and caught by the populace, some of whom plunged into the water with nets, but several lives were generally lost in the scramble."¹

A tolerably detailed account of the rainmakers of the Nilotic Dinka has been published elsewhere.² It must be understood that the Dinka consist of a congeries of tribes, in each of which one man, the *bain*, is supreme head in the politico-religious sphere, and this man is the rainmaker of his tribe.³

One Biyordit is the *bain* and rainmaker of the Bor tribe, and he also exerts considerable influence among the neighbouring poorer and weaker Tain Dinka, who have no cattle and live in small and scattered communities among the marshes. The following information was derived from him, and indicates the position of the rainmaker in relation to the high god Dengdit. In each of the eight rainmakers who preceded Biyordit there was immanent a great and powerful spirit called Lerpiu, now immanent in Biyordit, who says quite simply that at his death Lerpiu will pass into his son. Near a hut belonging to Biyordit there is another, constituting a shrine, in which the *jok* of Lerpiu is thought to reside more or less constantly. Within this hut is kept a very sacred spear, also called Lerpiu, and before it stands a post called *rit*, to which are attached the horns of many bullocks sacrificed to Lerpiu. Behind the hut there is a bush of the species called *akoi*, which must not be cut or damaged in any way, but which strangers are allowed to approach without the least ceremony. The *akoi* bush is clearly the least sacred part of the shrine, yet its presence is essential, for the *jok* leaves the hut to come to the *akoi* during the great rainmaking ceremony, and the slight sanctity of the *akoi* at other times is well explained by the absence of the *jok*.

¹ E. W. Lane, *op. cit.*, pp. 501-503.

² C. G. Seligmann, art. "Dinka," in Hastings' *Encyclopædia of Religion and Ethics*.

³ Not every man called *bain* is a rainmaker, for the men commonly spoken of as the "chiefs" or "sheykhs" of the Dinka tribes are often called by this name. In spite of this, there does not appear to be any tendency for village chiefs to attempt to emulate the rainmaker, or for quack practitioners to appear, for the successful rainmaker has within him the spirit of the great rainmakers of the past, and all recognize the futility of competing with him. Further, the existence of a powerful and successful rainmaker naturally leads those who live within his sphere of influence to leave all such matters to him. Although the authority of a *bain* is so great as to be practically absolute, I heard of an instance in which it had been disregarded. A *bain* foretold the defeat of his people at the hands of the Government and entreated them not to fight, yet his people fought and were defeated.

Central shrines such as that described, whereat the most important ceremonies including rainmaking are held, exist among all the Dinka tribes. That of the Shish tribe is at Lau, in the Bahr-el-Ghazal province, and the name of the spirit immanent in their rainmaker is Mabor. It was obvious that to the Shish of Shambe (some miles from Lau) the personality of the rainmaker was entirely submerged in that of the spirit immanent in him, so that, when they spoke of Mabor, the dominant idea in their minds was that of the ancestral spirit of this name working through the body of the man in whom it was immanent.

The rain ceremony consists of a sacrifice made in the spring (about April), when the new moon is a few days old. It is avowedly made to the great ancestral spirit which is believed to be immanent in the *bain*, in order to move Dengdit to send rain. The following outline of the actual proceeding was obtained from Biyordit and some of his old men. In the morning two bullocks are led twice round the shrine, and are tied to the *rit* by Biyordit; then the people beat drums, and men and women, boys and girls, dance round the shrine. Nothing further is done until the bullocks urinate, when everyone who can get near the beasts rubs his body with the urine, after which all except the old men go away. Presently the bullocks are killed by Biyordit, who spears them and cuts their throats. While the sacrifice is being prepared, the people chant, "Lerpiu, our ancestor, we have brought you a sacrifice, be pleased to cause rain to fall." The blood is collected in a gourd, transferred to a pot, cooked, and eaten by the old and important men of the clan. Some of the flesh of one bullock is cooked with much fat and left near the *akoi* for some months, yet it is said not to smell unpleasantly, and is ultimately eaten by people who have no cattle of their own. The food left near the *akoi* is said to be for the *jok*, the meat from the other bullock is eaten on the same day. The bones of the sacrifice are thrown away, but the horns are added to those already attached to the *rit*.

Among the Shir the *matat* corresponds in function and power to the Dinka *bain*, and like the latter has immanent in him an ancestral spirit which passes from rainmaker to rainmaker. In spite of this I obtained the impression that less confidence was shown in the *matat* than in the Dinka *bain*, the former seemed more mercenary and to have more of the instinct of the magician making his clients pay for the benefits he conferred, and less of the righteousness of a spiritual ruler standing in well defined and inviolable relation to the highest powers. Thus, although I spent more time among the Dinka than among the Shir I never heard a hint of a Dinka *bain* withholding rain, or of it being necessary to threaten him. On the other hand, among the Shir one of the first facts learnt about the rainmaker is that he may withhold rain in order to extort cattle. The *matat* is supposed to hold back the rain by burying a gourd filled with water under the floor of his house and when the rainy season is late he is charged with being responsible for the delay and is threatened with the loss of his possessions and the death of his children and even of himself if he does not bring the rain. He will then dig up the gourd and hurl it on the ground so that it breaks and the water it contains

is spilt. As he does this he prays. If rain does not fall soon the people say that it must be another man who is keeping back the rain. Not much could be learnt concerning the actual rain ceremony. It was said that the *matal* cuts the throat of a black he-goat or sheep, splits the animal down the front, and pegs it out on the ground; then water is poured upon the body, which is subsequently eaten.

The chiefs of the Bari are also rainmakers, and the attitude of their people towards them seems much the same as that of the Shir to their rain chiefs. Accounts of Bari rainmaking have been given by Mr. F. Spire¹ and by Captain Jennings Branly.² Both authors lay stress on the precarious position of the rainmaker who cannot produce rain at the proper season. Thus Spire notes that previous to the British occupation it was the custom to kill or severely punish an unsuccessful rainmaker,³ while Jennings Branly writes: "As to rainmakers, of course, the chief who lives near a hill has a greater reputation than he who lives in the plain. The position of a rainmaker is precarious, however; he has great power as long as the rain behaves within bounds, as he can always get more goats slaughtered up to a certain amount and feast upon them. But there comes a time when the need is too great, and he is given a last chance. Then an ox, if they can afford it, is slaughtered and a great feast prepared, and some of the blood with some round pebbles is put in one of the hollowed stones used by the women for grinding corn. This is left on one side, I presume as an offering to some higher power. The feast is held with much drumming; at its conclusion, on a given signal, amid dead silence, all retire to their huts, and not a sound is made till morning. If no rain comes in three weeks from that day the rainmaker is killed. . . ."⁴

Among the Shilluk the position of the king as rainmaker is less frankly obvious on account of the great amount of centralization that has occurred in both the politico-economic and religious spheres. Probably this people is the best organized in the Anglo-Egyptian Sudan; the king is absolute head of a state divided into districts, each administered by a chief directly responsible to the sovereign and acting as his proxy. Nevertheless, there can be no doubt that the king is responsible for the due supply of rain to his country, and on consideration it will be seen that his position is essentially similar to that of the Dinka rainmakers. Like them he is a "divine king" who in due course is killed ceremonially; like them he has within him the divine or semi-divine spirit of a great ancestor,⁵ and it is through his influence that the latter moves the high god Juok to send the rain. This is shown by the part taken by the king in the great rainmaking ceremony held at

¹ "Rainmaking in Equatorial Africa," *Journal of the African Society*, No. XVII, October, 1905.

² "The Bari Tribe," *Man*, 1906, 65.

³ *Op. cit.*, p. 19.

⁴ *Op. cit.*, p. 102.

⁵ A short description of the ceremony by which the spirit of the semi-divine Nyakang is transmitted to the king-elect will be found in my paper, "The Cult of Nyakang and the Divine Kings of the Shilluk." Other details are given by Westermann, *op. cit.*, pp. 124, 125.

Fashoda. The king gives a cow and a bullock to Nyakang; the cow is added to the herd belonging to the shrine, and the bullock is slain by one of the guardians of the shrine before the door with one of the sacred spears, the king standing near the beast shouting his prayer for rain to Nyakang and holding a spear pointing upwards in front of him. As much blood as possible is collected in a gourd and thrown into the river, and the same is done with the bones after the meat has been eaten by the guardians. Much of the dura preserved in the shrine since the beginning of the last harvest is used in making the *merissa* which is drunk at the ceremony. Incomplete as this account is, it shows the predominant part taken by the king. Moreover, the guardians of the shrine of Nyakang at Fenikang, own capital of Nyakang, say that the king should himself come to their village to perform the rain ceremony. In spite of this the usual practice is for the king to send the necessary animals and to allow his part to be performed by a substitute.

Turning to the half-Hamites, it may be said that we lack detailed information concerning the religion of any one of their tribes, but it is nevertheless possible to determine that their chiefs are rainmakers. Thus, among the Masai the *laibon* (medicine-man) or *ol-oiboni* is paramount chief. Of Lenana the present *laibon*, Hollis says, "All Masai acknowledge him as their lord and pay tribute to him,"¹ while of the Nandi he writes: "The *Orkoivot*, or principal medicine-man, holds precisely the same position as the Masai *Ol-oiboni*, that is to say, he is supreme chief of the whole race. He is a diviner, and foretells the future by such methods as casting stones, inspecting entrails, interpreting dreams, and prophesying under the influence of intoxicants. He is also skilled in the interpretation of omens and in the averting of ill-luck. . . .

"The Nandi believe implicitly in the powers of their *Orkoivot*. They look to him for instruction when to commence planting their crops; he obtains rain for them, either direct or through the rainmakers, in times of drought; he makes women and cattle fruitful; and no war-party can expect to meet with success unless he has approved of the expedition."²

The Position of the Body in the Grave.

The form of burial adopted by the predynastic Egyptians was in the flexed position with the body lying on the side, all manner of necessities and luxuries being buried with the deceased. It is, no doubt, somewhat bold to regard this so-called "embryonic" position as peculiarly Hamitic, yet in spite of its wide distribution and the paucity of information concerning the methods of burial in the Hamito-Semitic zone, there are certain striking coincidences which cannot be passed over as insignificant. In this connection it is important to remember that Egyptian evidence shows that a method of burial may be changed somewhat suddenly without any alteration in the essential religious ideas of the

¹ *The Masai*, p. 326.

² *The Nandi*, p. 49. Captain M. Mercker, who is quoted by Professor Frazer (*Lectures on the Early History of Kingship*, pp. 112-114), gives a similar account of the Masai chief.

people; necessities and luxuries are still buried with the corpse, there is, indeed, an exaggeration of the care bestowed upon it, when the flexed position gives place to the extended and painted coffins and elaborate monuments are substituted for skins or mats.¹ The Desert people, whose burials we know as "pan-graves," retained the flexed position until the time of the Middle Kingdom,² and it persisted at least as long in Nubia.³

Coming to the present day, the Beja of the Sudan, the Somali, and the Danakil, have all adopted the Mohammedan method of burial. This is not the case with the Galla, who lay the body on its side, but Paulitschke⁴ does not record whether the body is flexed or extended, though he notes that food and drink and the greater part of the valuables of the deceased are buried with him. Miss Werner informs me that the Galla of British East Africa bury in a contracted position, the corpse being tied in this posture, but inhumation is in the squatting, not the lying posture. Burial in the embryonic position occurs among the Nilotes, and is practised, I believe, by the Shilluk, and certainly by the Shish Dinka. The latter wash the body and shave the head; the skin upon which the corpse has been lying is placed in the grave and the body is laid on it resting on its right side with the knees and arms flexed, the head resting upon the right hand. Care is taken in arranging the skin to protect the ears so that earth may not get into them, indeed, a special piece of skin may be laid over the upper ear for this purpose.

The rarity of burial as a method of disposal of the dead among the half-Hamites makes it impossible to adduce evidence concerning them, but among the Bantu-speaking Akikuyu, whose physique and social organization resemble that of the half-Hamites, and who, like the latter, rarely bury their dead, burial, when it does occur, is on the side in the flexed position, and is "reserved as a mark of honour for a man who is old and rich, and has, in the ordinary course, at least two grown-up sons to perform the necessary rites. If a man is very rich he would be buried, even if he had no grown-up children, four old men performing the ceremony. A woman of very advanced age is also entitled to burial, because 'she would have much intelligence.' . . . The old men choose the site of the grave, which is outside the door of the hut. . . . The grave is nearly square in shape, only slightly inclining to the oblong. The body is placed on its side, with the knees bent and drawn up. The head rests, if a man, on the palm of the right hand; if a woman, on the palm of the left, or it may be placed on the two hands placed together, palms facing. . . . The whole is folded entirely and tied up in the clothes usually worn, so that not even the head is visible; the oxskin, or other bedding of the deceased, is either also used for this purpose or put first in the grave. The ornaments are taken off and put in the grave separately."⁵

¹ It is not relevant to the present argument to discuss how far this change may have been due to foreign influence.

² *Diaspolis Parva*, pp. 45, sqq.

³ *Archæological Survey of Nubia*, Bulletin No. 4, pp. 8-13.

⁴ *Op. cit.*, I, p. 204.

⁵ W. S. and K. Routledge, *With a Prehistoric People*, pp. 170, 171.

The inhabitants of the lacustrine kingdoms of Ankole and Unyoro also bury in the flexed position; the Bahima commit their rulers to the village manure heap, commoners are buried at the door of their huts, but in both classes the arms and legs are doubled up against the body, which lies on its side, and the head is bent forward.¹ The Banyoro place the body on its left side, with legs and arms flexed, and the hands under the head.² The Baganda do not bury in the flexed position.³

So much for the positive evidence; the negative evidence, though very incomplete, to a certain degree supports my argument. The least contaminated Nuba, those of southern Kordofan, do not bury in the flexed position, neither did the tall Negroids who came into Nubia under the later Ptolemies or during the early Christian period,⁴ while Dr. Derry's photographs of tall Negro or Negroid burials from Jebel Moya, near the Blue Nile, show that the extended, as well as the flexed position was in use.⁵ Holding as I do that the Negroids who came into Egypt were probably related to the Nuba of Kordofan, and that the folk of Jebel Moya certainly were, each of these facts supports the other.

Continuing southwards and westwards from Dar-Nuba so as to skirt the country of the Nilotes the evidence is all against burial in the "embryonic" position by the mesaticephals of Equatoria. The Azande are buried in a lying or sitting posture; moreover, when a king dies many of his wives are thrown alive into his grave to form a carpet for his body, their limbs being first broken to prevent them struggling. The Bongo inhume in a squatting position.⁶ A Lendu chief is buried in the floor of the hut in which he has formerly lived. The body is made to take a sitting position by means of cloth wrappings.⁷ In some parts of the Congo (north-east) burial is in a square pit dug in the house, the body being placed in a sitting position with the arms folded and wrists fixed to the shoulders. When the pit is filled in, the grave is sprinkled with ox blood or beer.⁸ These examples seem to indicate that the shorter, copper-coloured tribes to the west of

¹ Cunningham, *Uganda*, p. 10.

² Cunningham, *op. cit.*, pp. 30-31.

³ J. Roscoe, *The Baganda*, p. 119. The Baganda and the Banyoro, but not the Bahima, sacrificed numerous human victims at the burial of their king. Roscoe speaks of "hundreds" (*op. cit.*, p. 107) being slaughtered, and the account given by Baker of the funeral of Kamrasi King of Unyoro (*Ismailia*, p. 316), shows that a large number of people perished. The fact that the Bahima, whose non-Negro physical characteristics have been alluded to (*supra*, p. 657), do not provide human victims at the death of their rulers, whereas the more Negroid Banyoro and Baganda do so, is an additional argument in favour of the view already set forth (pp. 636, 637, *f.n.*) that the "customs" of West Africa and other wholesale slaughterings are Negro and not Hamitic in origin.

⁴ *Archaeological Survey of Nubia*, plates accompanying vol. ii, cf. Plate vi, Figs. e, f, g, h.

⁵ In the middle and northern Nuba zones (*cf.* p. 621, *f.n.*) there is much variety in the position of the body, which is squatting at Jebel Tiema and Jebel Katla Kurun (Anderson). Some of the "Nuba" of Northern Kordofan who formerly buried on the side in the flexed posture now bury in the extended position.

⁶ Schweinfurth, *Heart of Africa*, vol. i, p. 303.

⁷ Johnston, *Uganda Protectorate*, vol. ii, p. 554.

⁸ Wallis Budge, *Osiris and the Egyptian Resurrection*, vol. ii, p. 110.

the Nilotes, who have been subject to less Hamitic influence than their eastern neighbours, do not bury in the embryonic position.

Having discussed the distribution of the beliefs and customs set forth under the seven headings on p. 649, I may now consider the parallelism of the evolution of politico-social organization as it exists on the White Nile at the present day, and as it seems to have developed in predynastic Egypt. From what has been said when dealing with animal cults of ancient Egypt it may be assumed that in these early times there were a number of communities, of the same stock and in the same relatively early stage of civilization, extending along the banks of the Nile from the head of the delta to the neighbourhood of the First Cataract.¹ It must be borne in mind that the people now under discussion are not the Egyptians known to history but "naked, half-savage peasants,"² "great hunters, as well as skilful fishermen," whose industries "may have resulted in rudimentary commerce."³ It may be assumed that these communities at times fought among themselves, but on this point we have no evidence. There is, however, no doubt that towards the end of the predynastic period they were capable of combination, and the fragment of a slate palette now in Gizeh Museum shows a number of them united in attacking the walled cities of an enemy.⁴

Attackers and attacked are alike represented by signs, the majority of which also occur as standards. The besieging force is represented by a hawk, two hawks upon standards, a scorpion, and a lion, each holding a pick with which he is destroying the crenelated walls of the cities. The defenders, too, are indicated by signs representing a long-legged bird, perhaps a heron, an owl, a "reed," a building of conventionalized and heraldic form and an unusual form of the *ka* sign. No doubt, as first suggested by Professor Petrie,⁵ this represents "the conquest of seven Egyptian towns by various other tribes or towns whose emblems are figured attacking them." It is tempting to suggest that we have here an early stage in the confederation of the communities which later became the nomes, the Scorpion nome under its Scorpion king having not yet emerged as leader. In any event it cannot be doubted that at this early period some at least of the units represented

¹ The labours of the members of the Archaeological Survey of Nubia indicate that peoples of the same stock extended into Nubia much farther south, and some at least of these were sufficiently "Egyptian" to bury typically predynastic Egyptian objects with their dead (cf. especially Bulletin No. 7, pp. 13, 14, recording the contents of Grave 1 of Cemetery No. 137), but this southward extension of the predynastic race need not be considered in the present argument.

² Erman, *A Handbook of Egyptian Religion*, p. 6.

³ Breasted, *History of Egypt*, p. 30.

⁴ This slate probably comes from Abydos. Papers by Mr. F. Legge and Professor Petrie describing and discussing this and other palettes of the same period will be found in the *Proceedings of the Society of Biblical Archaeology*, vol. xxii, 1900, pp. 125-141. Mr. Legge's paper is illustrated by photographs of seven specimens. All these, and one more, are reproduced in *Man*, 1900, Plates B, C, D.

⁵ "Note on a Carved Slate," *Proc. Soc. Bibl. Arch.*, vol. xxii, 1900, p. 140.

by animal standards were accustomed to work together to a common end, for in the fragment of a palette now in the Louvre, five standards ending in hands are represented as pulling upon the same rope. These standards are jackal, jackal, hawk, hawk, and a sign which is apparently that which later became known as the attribute of Min of Koptos.

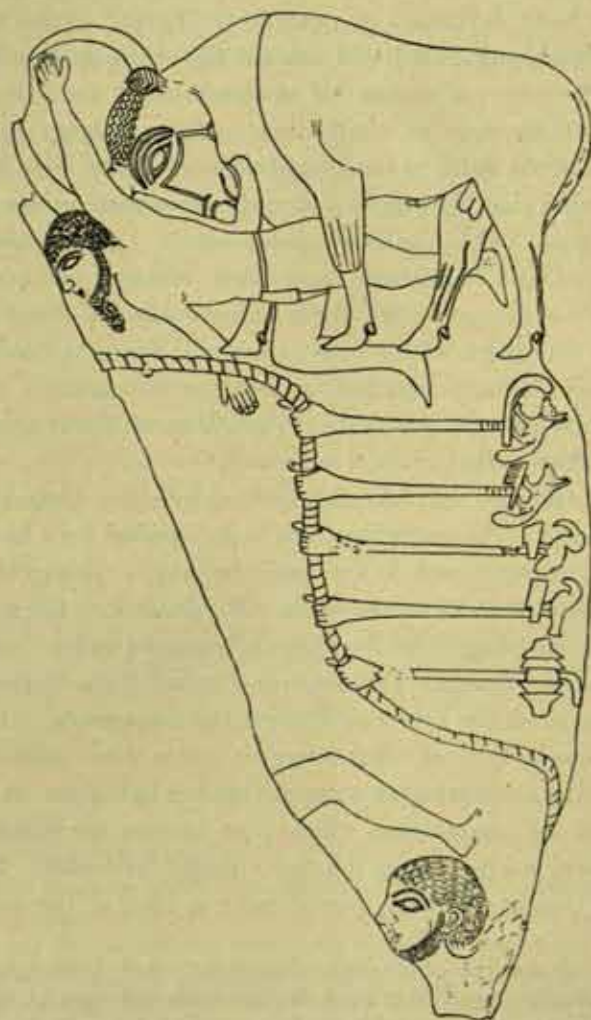


FIG. 2.

Breasted argues that there were probably some twenty communities, states or tribal units of the kind described distributed along the Nile in Upper Egypt,¹ to be united after many years, perhaps centuries, under the Scorpion king who ruled at Hierakonpolis, and to whose mace-head reference has been made. We do not know nor can we ascertain the number of these early kings who, with their colleagues

¹ *History of Egypt*, p. 31.

and rivals of the North, were spoken of by the later Egyptians as the "worshippers of Horus," semi-divine, half-mythic figures whom Manetho simply calls "the Dead."

The next step was the union of the North and South under Menes, whose successors welded the kingdom into that stable organization under the firm central control of the king which is the prominent feature of the Old Kingdom.

Turning to the Nilotes of the Sudan and the natives of Uganda we find peoples in whom we see clearly those main stages of development which, as outlined above, we can determine to have been traversed by the Egyptians. We are still dealing with peoples who, like the early predynastic Egyptians, might be described as "naked savage peasants," hunters, and fishermen.¹ Further, as has been remarked, the Nilotes show no inconsiderable admixture with that foreign (Hamitic) blood which ran pure or almost pure in the veins of the predynastic Egyptians, as it does at the present day in those of the southern Beja. The Baganda, though they have absorbed less of this blood, are, or were, ruled by a royal family, traditionally immigrant from the north, who belonged to a race of predominantly Hamitic stock. Lest it should seem that I am inclined to lay too much stress upon what after all may seem a comparatively small proportion of foreign blood in a large Negro population, I may once more refer to the type of Shilluk whose photograph is reproduced in Figs. 1 and 2 of Plate XXXVIII. I would point out that there is reason to believe that a comparatively small number of foreigners carrying a superior culture may impose some at least of the features of that culture on people of inferior race, even though the mass be too large to be influenced considerably in physical characters.²

If the actual socio-political conditions of the Nilotes be examined we find that development has taken place upon the same lines as those along which Egypt travelled. Everywhere dulled by Negro blood this progress has reached different stages among the tribes; nevertheless, the line of development seems to have been identical in the two peoples, and although on the material and technological side the Nilotes everywhere show marked inferiority to even the protodynastic Egyptians, it cannot, I think, be denied that the magico-religious ideas and practices of the two peoples agree to a remarkable extent. Moreover, the "drag" imposed by the large amount of Negro blood in the mixed Negro-Hamitic populations under consideration has varied in degree, and it is probably not an

¹ I purposely retain the language of Breasted and Erman lest I should be accused of unduly glorifying the Nilotes or of belittling the Egyptians, nevertheless the epithets applied to "native" peoples need not always be construed too literally; as far as I can determine there is no evidence that the predynastic Egyptians went naked, and though the males of the Dinka and of the Shilluk do not wear even a loin cloth, their women are clothed, as are both sexes of the Baganda.

² In support of this statement, which I believe holds good for a far greater area than Africa, I would cite from Melanesia the difference in culture of the Northern and Southern Massim, and in India the spread of Aryan beliefs and customs among the Dravidian and other non-Aryan tribes.

accident that the most advanced and stable socio-political organization existing among the Nilotes is to be found among the Shilluk, the people in whom the proportion of Hamitic blood is largest. The following brief summary of the political and social condition of the Nilotes will make clear the stages of development reached by the more important peoples.

The Dinka consist of a congeries of autonomous tribes often at war with their neighbours and each ruled by a rainmaker, who incarnates a divine or semi-divine spirit, and in his old age is ceremonially killed, in order to secure the continued prosperity of the country. All the Dinka tribes are totemic, and their religion consists of the cult of a high god and ancestral spirits. As far as can be determined, no one tribe or chief has ever risen or attempted to rise to a predominant position, nor is there any evidence that neighbouring Dinka tribes have tended to coalesce even when inhabiting areas in which identical geographical conditions exist.

The Bari are less well known than the Dinka. Sir Samuel Baker, who visited the country in 1871, *i.e.*, before the Dervish troubles, speaks of the Bari as having many independent sheykhs and none paramount,¹ so that at first sight it would appear that the political organization of the Bari resembles that of the Dinka. Nevertheless, Mr. E. B. Haddon, who has specially studied this matter, has adduced evidence to show that a good deal more centralization has gone on among the Bari than among the Dinka.² According to native legend the Bari came into the Nile valley as the result of the fission of an old Beri-Bari tribe. Later there were further divisions, as a result of which the Mundari, Shir, Nyefu, and Fajelu tribes were formed. There always have been among the Bari a number of exogamous divisions, each with special cattle marks, but Mr. Haddon was unable to obtain proof of the existence of totems. After these movements a process of centralization went on among the Bari. The various clans divided the country amongst themselves, the head of each clan being the ruling chief in each community, so that the whole country was divided into districts governed by *bonua*, but under the chief of the Bekat clan, who was principal rain-chief (*mata*) or "king" of the Bari. At one time a number of kindred tribes speaking Bari or one of its dialects, *viz.*, Nyefu, Fajelu, Mundari, and Shir, were dependent on the Bari *mata* for rain.³ Centralization has proceeded still further among the Shilluk, whose king, the supreme temporal and spiritual head, rules a united nation of some 50,000 souls from his capital, Fashoda. In each king the spirit of the semi-divine Nyakang, the legendary founder and first ruler of the Shilluk nation, is incarnate. Totemism does not exist among the Shilluk, nor is there any definite clan organization, though it is believed that the royal line sprang from animal ancestors. The country is divided into a number of districts, each administered by a chief responsible to the king, whose place he takes in such

¹ *Ismailia* (London, 1879), p. 115.

² "System of Chieftainship among the Bari," *Journ. African Soc.*, No. XL, vol. x, 1911.

³ E. B. Haddon, *op. cit.*

important religious festivals as the rain and harvest ceremonies, offerings for which are, at least in theory, provided by the king, who should himself officiate at the more important shrines. Probably much the same development might be traced among the half-Hamites as among the Nilotes, indeed, I believe that consideration of the facts and the writings of the authors quoted in this paper would make this clear, but, as even less is known concerning the religious and social organization of the former, it does not seem worth while to seek formally to establish the parallelism.¹

From the brief summary given of the conditions of the Nilotes it will be evident that the political evolution of the Dinka may be regarded as corresponding in a certain measure to that stage of development of predynastic Egypt in which a series of communities of kindred stock extended along the banks of the Nile. Perhaps the Bari represent a stage somewhat anterior to that which seems to be recorded on the slate palettes, when warfare was conducted by allied communities and led to the condition of centralization which is known to have existed under the Scorpion King. But whether a parallelism such as I have sketched be admitted or not, I think the facts adduced leave no doubt as to the close similarity in social and religious organization of the late predynastic and protodynastic Egypt and the Shilluk kingdom as it exists at the present day. To my mind there is a surprising similarity in the position of the Shilluk kings and of the protodynastic rulers as we can reconstruct it from the monuments, and this resemblance is greatly strengthened if, as suggested on p. 665, the view be adopted that the king of Egypt was ceremonially killed as are (or were) the Shilluk kings and Dinka rainmakers.

There is, too, a closer parallelism between the animal gods of Egypt and the divine or semi-divine ancestors of the Shilluk than is at first apparent. Differences in degree, if great enough, are scarcely distinguishable from differences in kind, so at first sight the countless animal-headed gods of the Middle Kingdom or the New Empire seem to stand apart from anything existing in Africa at the present day. Yet in the earlier periods such representations were uncommon, so that it is easy to give a list of at least the best known examples. On the palette of Narmer there is a woman's head with cow's horns and ears; the Sphinx is now usually attributed to Khafra (and even considered his portrait). A lioness-headed woman is figured by Borchardt from a bas-relief of the fifth dynasty, and he also reproduces fragments showing the king as a lion trampling on his enemies. The upper parts of the figures are destroyed, but, as Miss Murray suggests, the lion had a human head as on the chariot of Thothmes IV. I do not recall animal or human figures carved by the northern Nilotes, but there is a tradition concerning a wooden image of Nyakang, and the Shilluk certainly believe in divine or semi-divine beings part animal, part

¹ It may be pointed out, however, that while there is the closest resemblance in the social organization, habits, and customs of the Nandi and the Masai, the former are certainly totemic, while of the latter it can only be said that they are divided into a number of exogamous clans, and that totemism may be suspected.

man. According to one account Nyakang was himself half crocodile, while legend states that crocodiles, hippopotami, and other wild beasts were turned into men at his will. His sister Nikaiya or Niyakai still lives in the river in crocodile form, though she appears in human guise from time to time, when she is known by the way she mouths her words. Sometimes her appearance brings good luck, at other times she comes to carry off victims for her crocodile friends in the river. The Shilluk kings still appear in animal forms, especially in the vicinity of their grave-shrines, and some fifty years ago Nyakang was himself recognized as a white bull to which sacrifices were made.

In further confirmation of what I have said, let me point out that just as Osiris in one aspect was the first king of Egypt and its culture hero who taught men useful arts, so Nyakang was the first ruler of the Shilluk who gave them their laws and customs, and to this day, when the Shilluk king is installed, the wooden effigy of Nyakang is brought from its shrine and placed upon the royal chair before the new king takes his seat.

In view of the great area concerned in this inquiry and the various stages of development of the peoples considered, remembering also the ethnic and religious floods by which it has been submerged, either partially or completely, since the time—some six thousand years ago—of the proto-Egyptians, I do not hesitate to suggest that the customs and beliefs examined show such a substantial agreement as can be explained best by the assumption that the peoples discussed either represent the descendants of that stock which gave rise to the proto-Egyptians or have been permeated by its influence. If this be agreed, it is permissible to seek to reconstruct the early Hamitic culture from those ideas and customs which are common to Hamites, half-Hamites, and Nilotes. A common measure of these can be stated, and this may be considered to outline the beliefs of the early Hamites.

Proceeding on these lines it may be said that the Hamites were a pastoral people with matrilineal descent, perhaps totemistic but certainly given to animal cults. If they were totemistic, then the marriage of near kin which we know occurred, and still occurs in some of their descendants, may indicate a comparatively late stage in their development, and may have been induced by socio-economic factors such as I believe are responsible for the "best" Arab marriage, viz., that of a man with his paternal uncle's daughter. Circumcision was practised, as was clitoridectomy or some similar operation. The cult of the dead was of special importance, but with this was combined the worship of a god dwelling in, or identified with, the sky, who gave the rain without which the cattle would perish and mankind would starve. The importance of cattle probably gave rise to the beliefs which are indicated by the holy or sacrosanct character of milk and grass.

Excepting only in those rare districts where grass and water are superabundant pastoral people are ever patriarchal, in the sense that there must be an absolute ruler in each community, whose word is law in all that concerns the cattle; so

the wise senior, who during a long term of years had led his people to clean and abundant pasture, might come to be regarded as having a special influence with the god of the firmament. Thus the god in the sky, or identified with the sky, would tend to assume the form of a rain-god and his arch-servant to become a rainmaker. The killing of the rainmaker or divine king can perhaps best be understood in connection with the yearly renaissance of vegetation on the lines advocated by Professor Frazer; in any case this custom seems to have had a perfectly definite place in early Hamitic practice. In relation with this it may not be amiss to refer to the East African (Hamitic) custom of age-grades each with its own chief, or chiefs, who take charge of the country for a given time, but this matter is at present so obscure that I do not care to do more than indicate the possibility of some connection. The idea of a spiritual double seems widespread in the Hamitic zone,¹ and I have little doubt that in this idea lies the explanation of the care taken of the placenta, which seems to be considered as the double of the child, with a spirit of its own essentially similar to the child's soul or spirit. The dead were buried in the "embryonic" position, *i.e.*, lying on the side with the limbs flexed and the head bent forward.

¹ Perhaps going back to the undivided Hamito-Semitic period, the common Semitic idea of the guardian angel may be connected with the double, and to this day the Egyptian Fellahin who speak of the double as *qarina* (partner, companion) tend to confuse it with the *shaitan* that follows man through life.

APPENDIX I.

HADENDOA SKULLS.

Skull No. I.

Complete cranium with mandible, the left ramus of the latter missing. Fragments of scalp found with this showed that hair was wavy. Skull rather long, moderately narrow (C.I. 75.6). There is cracking and bulging outwards of left side of skull in region of parietal boss which makes the transverse diameter not quite certain, though the measurement given can be scarcely more than a couple of millimetres out. The posterior third of the sagittal suture lies in a broad shallow depression. No occipital bulge.

Face not broad, orbits large and rounded in general form, supraorbital ridges absent, the supraorbital notch is so slight that it can only be said to be indicated. Nasal bones well developed, the aperture of the nose does not suggest Negro influence, though on the right side the rima is somewhat deficient.

Jaw not heavily built, chin moderate, ascending ramus short and broad, edge of ramus at angle not turned out, but on contrary rather slopes inwards. Angle rounded to so considerable an extent that at first sight it almost looks as if it had been pared away. Sigmoid notch broad, moderately shallow. Coronoid process moderately developed.

To sum up, a rather slightly built skull, not of the extreme proto-Egyptian type, but suggesting Negroid influence.

There is nothing heavy or "square" about the face or jaw.

Skull No. II.

Complete skull with mandible. Moderately broad and well filled (C.I. 75). No occipital bulge.

Face not broad, orbits tend to be angular and elliptical rather than circular, supraorbital ridges slight, foramina present.

Nasal bones well developed, rima at base of nostril very slightly developed, some subnasal prognathism.

Jaw moderately stoutly built, chin well developed, ascending ramus short and broad, angle not turned out. Sigmoid notch broad, shallow but not excessively so. Coronoid process moderate.

The strongest built and best filled skull of the series.

Skull No. III.

A moderately short and broad cranium (C.I. 76.3), the mandible is missing, there is slight flattening of the upper surface of both parietals, there is no bulging in the occipital region. A few hairs adhering to the surface of the skull show that the hair was wavy or curly.

Face: this suggests Negro influence, there is distinct prognathism, the nasal aperture is broad for its height and there is no rima separating the floor of the nasal cavity from the canine fossa. The brow ridges are very slight, the supra-orbital notches are represented by foramina, the orbits tend to be rectangular and their longitudinal axes are somewhat oblique.

Skull No. IV.

A long narrow "coffin-shaped" skull (C.I. 723) with slight degree of klinecephaly. The frontal has been cracked centrally by a triradiate fissure and the adjoining edges of the fragments have been thrust somewhat outwards from within. There is no occipital bulge. Face is perhaps slightly prognathous, the brow ridges are scarcely indicated, the orbits tend to be rectangular, their long axes are somewhat oblique. Nasal bones well developed, nasal aperture moderately wide.

Skull No. V.

Calvaria only; symmetrical senile (?) atrophy of area which should be occupied by parietal bosses. Skull moderately long and fairly well filled (C.I. 764). A metopic suture is present. Enough of right supraorbital region persists to show that there was only the slightest development of the supraorbital ridges. Occipital bulge well marked.

Skull No. VI.

Calvaria only, moderately long, rather narrow (C.I. 773). There is a slight lateral asymmetry (not, I think, P.M.). Occipital bulge well marked. Supraorbital ridges, which in general terms would be described as slight, are moderately well developed for this type of skull.

Skull No. VII.

Skull only, almost whole of left side below temporal line has been broken away. In shape a fairly broad oval, the vertex and neighbouring region is flatter than in other skulls of the series.

Face not broad, orbits tend to be round and are certainly not small. Cheek bones perhaps rather prominent. Supraorbital ridges slight, supraorbital notches present.

Nasal bones well developed, rima everywhere sharp, perhaps there is slight subnasal prognathism.

Skull No. VIII.

Skull only, the greater part of the left parietal has been destroyed. Some curly or wavy hair remains attached to the skull, which is moderately long and when seen from above is oval.

Face: brow ridges moderately well developed. Orbits large, tend to be round and perhaps to droop slightly at their outer and lower angles. There is a supraorbital foramen on the right side, on the left a notch.

Nasal bones well developed yet there is slight subnasal prognathism and the floor of the nostril passes directly into the canine fossa.

Skull No. IX.

Skull only, much of the left parietal, including the region of the parietal eminence, is broken away. On the right side there is absorption of bone, resulting in thinning in two situations, namely, immediately behind and below the parietal boss and also external to and rather in front of the eminence. Probably the latter area of absorption was bilateral and symmetrical. Seen from above the skull is a moderately long oval with a fairly well marked occipital bulge (C.I. 73-4).

Face somewhat coarse, prominent cheek bones. Orbits tend to be elliptical and angular rather than round, their long axes are almost horizontal. Supraorbital ridges slight, small supraorbital notch on both sides.

Nasal bones fairly well developed, nasal apertures almost round in form, but rima well marked below. Some subnasal prognathism. Extensive absorption of alveolar process, most of the molars having been lost during life.

Skull No. X.

Skull only, most of the sutures have started and the bones are out of position owing to this, nevertheless it can be seen that skull was a moderately broad oval with some but not extensive bulging of the occiput (C.I. 79-9). Both zygomata and the underlying portions of the skull have been broken away.

Face: the orbits tend to be round, supraorbital ridges scarcely indicated. Supraorbital foramina, not notches, are present.

Nasal bones well developed, nares open directly into canine fossa, some subnasal prognathism.

Skull No. XI.

Skull only, left side of cranium and almost whole of occipital region missing.

Face large, rounded orbits rather pulled down at outer angle, supraorbital ridges slight.

No subnasal prognathism.

MEASUREMENTS OF HADENDOA SKULLS.

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Average |
|--------|-------|-------|-------|-------|------|-----|-------|------|-------|-------|------|---------|
| L. | 176 | 180 | 169 | 177 | 178 | 176 | 179 | 180 | 173 | 169 | — | 175.7 |
| B. | 133 | 135 | 129 | 128 | 136 | 136 | — | — | 127 | 135 | — | 132.8 |
| Bi. | 756 | 750 | 763 | 723 | 764 | 773 | — | — | 734 | 799 | — | 757.7 |
| H. | 128 | 138 | 125 | 127 | 124 | — | 135 | 141 | 119 | 124 | 131 | 130.2 |
| Hi. | 72.7 | 76.7 | 74.0 | 71.8 | 75.3 | — | 75.4 | 78.3 | 68.8 | 73.4 | — | 74.0 |
| B.N. | 100 | 105 | 94 | 92 | — | — | 106 | 101 | 97 | 90 | 100 | 98.3 |
| B.A. | 102 | 105 | 90 | 92 | — | — | 98 | 92 | 101 | 90 | 97 | 96.3 |
| Al. | 102.0 | 100.0 | 95.7 | 100.0 | — | — | 92.5 | 91.1 | 104.1 | 100.0 | 97.0 | 98.0 |
| U.F.L. | 74 | 68 | 60 | 66 | — | — | 64 | 67 | 60 | 63 | 70 | 65.7 |
| Bi-z. | 124 | 130 | 115 | 108 | — | — | 134.1 | 122 | 130.1 | 116 | — | 122.3 |
| U.F.I. | 59.6 | 52.3 | 52.1 | 61.1 | — | — | 47.7 | 54.9 | 46.1 | 54.3 | — | 53.5 |
| N.H. | 49 | 48 | 47 | 45 | — | — | 49 | 42 | 43 | 45 | 48 | 46.2 |
| N.W. | 25 | 28 | 25 | 24 | — | — | 24 | 24 | 25 | 23 | 22 | 24.4 |
| Ni. | 51.0 | 58.3 | 53.2 | 53.3 | — | — | 49.0 | 57.1 | 58.1 | 51.1 | 45.8 | 52.9 |
| O.W. | 40 | 40 | 35 | 36 | — | — | 35 | 40 | 38 | 35 | 38 | 37.4 |
| O.H. | 37 | 31 | 32 | 34 | — | — | 35 | 34 | 38 | 32 | 37 | 34.4 |
| Ol. | 92.5 | 77.5 | 91.4 | 94.4 | — | — | 100.0 | 85.0 | 100.0 | 91.4 | 97.4 | 92.1 |
| Circ. | 496 | 510 | 477 | 492 | — | — | — | 505 | 482 | 490 | — | 494.6 |
| Cap. | 1,120 | 1,260 | 1,040 | 1,120 | — | — | — | — | 1,010 | — | — | — |

MEASUREMENTS OF JAWS.

| No. | 2 | 4 |
|--|-----|----|
| Bicondylar. | 116 | 91 |
| Bigonial. | 85 | 73 |
| Height of Symphysis. | 34 | 28 |
| Thickness of Symphysis. | 36 | 13 |
| Height of mandible at second molar. | 26 | 25 |
| Thickness of mandible at second molar. | 16 | 13 |

BENI AMER.

| No. | Division. | H.L. | H.B. | Bi-z. | Bi-g. | F.L. | U.F.L. | N.L. | N.B. | Bi-m. | N-m. | Stature. |
|-----|----------------|------|------|-------|-------|------|--------|------|------|-------|------|----------|
| 45 | Ḥasa ... | 184 | 133 | 124 | 100 | 97 | 54 | 45 | 38 | 90 | 107 | 1,507 |
| 46 | Afilenda ... | 178 | 132 | 120 | 103 | 120 | 66 | 50 | 34 | 90 | 111 | 1,583 |
| 47 | Beit Māala ... | 200 | 143 | 120 | 92 | 126 | 74 | 53 | 35 | 93 | 108 | 1,701 |
| 48 | Adhasri ... | 186 | 136 | 120 | 90 | 111 | 63 | 51 | 36 | 90 | 106 | 1,688 |
| 49 | Adhasri ... | 196 | 143 | 130 | 90 | 123 | 70 | 55 | 38 | 94 | 115 | 1,711 |
| 50 | Afilenda ... | 185 | 127 | 126 | 100 | 116 | 67 | 51 | 37 | 99 | 118 | 1,668 |
| 51 | Ḥasa ... | 181 | 139 | 123 | 97 | 115 | 67 | 56 | 40 | 95 | 112 | 1,604 |
| 52 | Beit Māala ... | 194 | 155 | 138 | 97 | 120 | 68 | 51 | 37 | 98 | 122 | 1,686 |
| 53 | Beit Māala ... | 192 | 145 | 127 | 96 | 116 | 61 | 51 | 37 | 92 | 110 | 1,815 |
| 54 | — | 199 | 138 | 139 | 97 | 118 | 61 | 50 | 39 | 98 | 117 | 1,719 |
| 55 | — | 200 | 148 | 134 | 110 | 112 | 64 | 55 | 41 | 99 | 127 | 1,678 |
| 56 | Afilenda ... | 177 | 148 | 135 | 93 | 118 | 69 | 55 | 37 | 96 | 118 | 1,660 |
| 57 | Adhasri ... | 199 | 142 | 125 | 97 | 122 | 67 | 56 | 51 | 97 | 121 | 1,658 |
| 58 | Ḥasa ... | 187 | 148 | 134 | 92 | 123 | 65 | 55 | 37 | 94 | 115 | 1,632 |
| 59 | Afilenda ... | 195 | 142 | 132 | 83 | 119 | 65 | 51 | 37 | 96 | 115 | 1,500 |
| 60 | Adhasri ... | 186 | 138 | 129 | 85 | 118 | 65 | 55 | 38 | 93 | 112 | 1,683 |
| 61 | Adhasri ... | 188 | 140 | 115 | 94 | 117 | 63 | 51 | 41 | 91 | 109 | 1,687 |
| 62 | — | 200 | 146 | 122 | 86 | 114 | 65 | 52 | 38 | 90 | 109 | 1,600 |
| 63 | Beit Māala ... | 196 | 140 | 133 | 103 | 124 | 70 | 60 | 35 | 99 | 121 | 1,653 |
| 64 | Beit Māala ... | 190 | 140 | 126 | 90 | 120 | 70 | 54 | 35 | 93 | 111 | 1,583 |
| 65 | Afilenda ... | 185 | 145 | 122 | 90 | 112 | 64 | 53 | 39 | 83 | 103 | 1,627 |
| 66 | Adhasri ... | 184 | 135 | 127 | 95 | 124 | 66 | 55 | 37 | 91 | 109 | 1,614 |
| 67 | Beit Māala ... | 186 | 142 | 124 | 88 | 120 | 65 | 51 | 32 | 91 | 107 | 1,595 |
| 68 | Adhasri ... | 190 | 148 | 132 | 96 | 127 | 72 | 55 | 35 | 105 | 124 | 1,666 |
| 69 | Adhasri ... | 191 | 144 | 126 | 93 | 103 | 58 | 50 | 32 | 90 | 106 | 1,619 |
| 70 | Ḥasa ... | 194 | 138 | 132 | 96 | 126 | 63 | 55 | 33 | 95 | 117 | 1,650 |
| 71 | Habab ... | 187 | 142 | 135 | 98 | 125 | 71 | 55 | 35 | 95 | 114 | 1,609 |
| 72 | Beit Māala ... | 195 | 148 | 132 | 100 | 126 | 68 | 52 | 42 | 96 | 113 | 1,639 |
| 73 | Habab ... | 190 | 140 | 130 | 84 | 122 | 66 | 54 | 38 | 93 | 111 | 1,619 |
| 74 | Habab ... | 181 | 140 | 120 | 95 | 117 | 65 | 50 | 32 | 93 | 112 | 1,628 |

BENI AMER—*continued.*

| No. | Division. | H.L. | H.B. | Bi-z. | Bi-g. | F.L. | U.F.L. | N.L. | N.B. | Bi-m. | N-m. | Stature. |
|-----|----------------|------|------|-------|-------|------|--------|------|------|-------|------|----------|
| 75 | Adhasri ... | 196 | 144 | 119 | 93 | 123 | 71 | 60 | 39 | 95 | 114 | 1,631 |
| 76 | Kantebai ... | 190 | 138 | 125 | 88 | 116 | 60 | 49 | 36 | 95 | 117 | 1,664 |
| 77 | Habab ... | 190 | 154 | 135 | 95 | 125 | 70 | 54 | 34 | 97 | 129 | 1,755 |
| 78 | Habab ... | 193 | 143 | 130 | 100 | 113 | 63 | 48 | 39 | 97 | 117 | 1,644 |
| 79 | Habab ... | 189 | 143 | 128 | 96 | 122 | 66 | 52 | 38 | 97 | 120 | 1,700 |
| 80 | Habab ... | 188 | 140 | 124 | 96 | 113 | 58 | 49 | 35 | 95 | 117 | 1,677 |
| 81 | Habab ... | 191 | 140 | 126 | 103 | 117 | 70 | 51 | 43 | 94 | 113 | 1,604 |
| 82 | Beit Mâala ... | 186 | 148 | 134 | 94 | 121 | 67 | 57 | 35 | 97 | 121 | 1,668 |
| 83 | Habab ... | 194 | 139 | 124 | 94 | 116 | 62 | 52 | 33 | 90 | 113 | 1,630 |
| 84 | Habab ... | 184 | 146 | 130 | 88 | 114 | 65 | 48 | 35 | 96 | 114 | 1,572 |
| 87 | Hakolab ... | 180 | 142 | 120 | 93 | 116 | 61 | 48 | 32 | 91 | 109 | 1,618 |
| 99 | Hasa ... | 194 | 142 | 128 | 94 | 108 | 57 | 47 | 34 | 91 | 113 | 1,640 |
| 100 | Habab ... | 186 | 156 | 124 | 86 | 113 | 62 | 45 | 33 | 93 | 111 | 1,552 |
| 101 | Adhasri ... | 200 | 148 | 134 | 100 | 121 | 67 | 53 | 36 | 97 | 120 | 1,671 |
| 102 | Habab ... | 191 | 140 | 132 | 100 | 118 | 64 | 51 | 35 | 97 | 122 | 1,693 |
| 103 | Habab ... | 203 | 138 | 130 | 97 | 125 | 72 | 56 | 39 | 95 | 114 | 1,620 |
| 104 | Habab ... | 195 | 142 | 128 | 100 | 114 | 63 | 50 | 37 | 97 | 118 | 1,642 |
| 105 | Habab ... | 198 | 140 | 136 | 94 | 111 | 60 | 47 | 36 | 98 | 115 | 1,754 |
| 106 | Habab ... | 194 | 140 | 126 | 90 | 119 | 68 | 50 | 34 | 95 | 120 | 1,606 |
| 115 | — | 194 | 147 | 130 | 99 | 115 | 66 | 51 | 31 | 93 | 110 | 1,552 |
| 116 | — | 183 | 140 | 125 | 90 | 112 | 58 | 45 | 35 | 93 | 111 | 1,616 |

HADENDOA AND AMARA.

| No. | Division. ¹ | H.L. | H.B. | Bi-z. | Bi-g. | F.L. | U.F.L. | N.L. | N.B. | Bi-m. | N-m. | Stature. |
|-----|------------------------|------|------|-------|-------|------|--------|------|------|-------|------|----------|
| 16 | Amara ... | 192 | 150 | 139 | 100 | 125 | 73 | 53 | 22 | 97 | 125 | 1,687 |
| 17 | Amara ... | 196 | 153 | 124 | 90 | 120 | 70 | 53 | 33 | 91 | 110 | 1,660 |
| 18 | Amirab ... | 194 | 154 | 133 | 97 | 148 | 66 | 54 | 39 | 94 | 108 | 1,692 |
| 19 | Amirab ... | 208 | 134 | 124 | 100 | 124 | 66 | 55 | 35 | 95 | 116 | 1,762 |
| 20 | Amirab ... | 178 | 130 | 128 | 95 | 112 | 69 | 48 | 33 | 90 | 107 | 1,573 |
| 21 | Amirab ... | 188 | 146 | 126 | 93 | 107 | 59 | 43 | 36 | 93 | 112 | 1,577 |
| 22 | Amirab ... | 186 | 140 | 125 | 90 | 108 | 60 | 47 | 36 | 93 | 111 | 1,605 |
| 23 | Bishariab ... | 187 | 146 | 133 | 97 | 115 | 66 | 55 | 35 | 91 | 111 | 1,601 |
| 24 | Bishariab ... | 188 | 143 | 129 | 95 | 145 | 64 | 55 | 37 | 88 | 104 | 1,672 |
| 25 | Amirab ... | 190 | 148 | 134 | 93 | 117 | 69 | 50 | 38 | 93 | 108 | 1,689 |
| 26 | Amirab ... | 201 | 150 | 140 | 107 | 135 | 79 | 60 | 34 | 100 | 122 | 1,706 |
| 27 | Amirab ... | 122 | 143 | 134 | 97 | 121 | 71 | 55 | 39 | 93 | 110 | 1,756 |
| 28 | Amirab ... | 186 | 144 | 125 | 87 | 110 | 61 | 43 | 36 | 95 | 109 | 1,603 |
| 29 | Amirab ... | 192 | 148 | 124 | 94 | 119 | 72 | 54 | 38 | 89 | 106 | 1,616 |
| 30 | Amirab ... | 177 | 139 | 117 | 90 | 113 | 66 | 48 | 35 | 87 | 103 | 1,596 |
| 31 | Bishariab ... | 179 | 136 | 129 | 88 | 110 | 65 | 50 | 38 | 90 | 107 | 1,692 |
| 32 | Amirab ... | 181 | 148 | 128 | 100 | 112 | 65 | 50 | 36 | 92 | 111 | 1,669 |
| 33 | Amirab ... | 196 | 150 | 136 | 98 | 117 | 61 | 47 | 37 | 101 | 119 | 1,800 |
| 34 | Amirab ... | 193 | 138 | 130 | 98 | 131 | 70 | 55 | 40 | 96 | 122 | 1,744 |
| 35 | Bishariab ... | 195 | 152 | 129 | 89 | 114 | 64 | 52 | 34 | 89 | 110 | 1,713 |
| 36 | Amirab ... | 189 | 148 | 120 | 92 | 119 | 65 | 50 | 36 | 87 | 105 | 1,754 |
| 37 | Amirab ... | 188 | 140 | 130 | 95 | 118 | 65 | 50 | 38 | 96 | 110 | 1,675 |
| 38 | Amirab ... | 190 | 146 | 132 | 101 | 130 | 70 | 51 | 39 | 95 | 112 | 1,726 |
| 39 | Amirab ... | 190 | 142 | 124 | 100 | 119 | 69 | 54 | 41 | 95 | 113 | 1,736 |
| 40 | Amirab ... | 188 | 148 | 126 | 95 | 112 | 60 | 48 | 35 | 92 | 112 | 1,627 |
| 41 | — | 194 | 148 | 134 | 103 | 126 | 68 | 51 | 40 | 98 | 145 | 1,693 |
| 42 | Amirab ... | 192 | 146 | 130 | 100 | 118 | 68 | 50 | 37 | 99 | 119 | 1,680 |
| 43 | Amirab ... | 188 | 146 | 140 | 100 | 118 | 65 | 56 | 41 | 94 | 109 | 1,732 |
| 44 | Amirab ... | 191 | 140 | 122 | 95 | 122 | 69 | 48 | 40 | 94 | 110 | 1,606 |
| 85 | Hakolab ... | 198 | 150 | 130 | 90 | 123 | 70 | 58 | 37 | 91 | 113 | 1,675 |
| 86 | Amara ... | 180 | 146 | 128 | 92 | 115 | 63 | 56 | 42 | 90 | 111 | 1,539 |
| 88 | Sherab ... | 188 | 138 | 130 | 88 | 119 | 61 | 50 | 38 | 90 | 119 | 1,690 |
| 89 | Sherab ... | 186 | 138 | 133 | 97 | 118 | 65 | 52 | 38 | 95 | 115 | 1,652 |
| 90 | Amara (Nurab)... | 190 | 148 | 138 | 96 | 116 | 66 | 52 | 38 | 97 | 117 | 1,725 |
| 91 | Ashraf ... | 196 | 154 | 134 | 98 | 124 | 68 | 55 | 38 | 94 | 121 | 1,684 |
| 92 | Gumilab ... | 196 | 144 | 132 | 94 | 123 | 67 | 54 | 40 | 93 | 122 | 1,785 |
| 93 | Kololaib ... | 190 | 143 | 129 | 100 | 116 | 64 | 51 | 42 | 92 | 113 | 1,621 |
| 94 | Abel Gaur ... | 190 | 142 | 128 | 104 | 109 | 62 | 53 | 38 | 91 | 111 | 1,630 |
| 95 | Gumilab ... | 184 | 144 | 122 | 97 | 125 | 70 | 56 | 41 | 99 | 123 | 1,645 |
| 96 | Amara (Nurab)... | 193 | 148 | 122 | 88 | 117 | 71 | 51 | 37 | 92 | 111 | 1,655 |

¹ The divisions of the Amara are not given, the other names are those of Hadendoa divisions.

HADENDOA AND AMARA—*continued*.

| No. | Division. ¹ | H.L. | H.B. | Bi-z. | Bi-g. | F.L. | U.F.L. | N.L. | N.B. | Bi-m. | N-m | Stature. |
|-----|------------------------|------|------|-------|-------|------|--------|------|------|-------|-----|----------|
| 97 | Abdelwab | ... | 188 | 150 | 124 | 98 | 115 | 65 | 51 | 37 | 91 | 1,663 |
| 98 | Kamilab | ... | 184 | 142 | 132 | 104 | 117 | 61 | 45 | 38 | 95 | 1,592 |
| 107 | Amara ... | ... | 196 | 148 | 130 | 94 | 124 | 72 | 54 | 40 | 103 | 1,681 |
| 108 | Amara ... | ... | 194 | 144 | 128 | 92 | 111 | — | 51 | 33 | 95 | 1,656 |
| 109 | Amara ... | ... | 196 | 156 | 130 | 98 | 127 | 71 | 58 | 35 | 91 | 1,630 |
| 110 | Amara ... | ... | 184 | 143 | 124 | 90 | 114 | 62 | 49 | 38 | 91 | 1,706 |
| 111 | — | ... | 188 | 148 | 130 | 100 | 117 | 70 | 52 | 35 | 96 | 1,737 |
| 112 | Amara ... | ... | 194 | 152 | 134 | 92 | 126 | 69 | 52 | 39 | 91 | 1,707 |
| 113 | Amara ... | ... | 186 | 140 | 122 | 95 | 116 | 64 | 47 | 36 | 89 | 1,637 |
| 117 | — | ... | 195 | 145 | 134 | 94 | 131 | 78 | 58 | 35 | 92 | 1,672 |
| 118 | Amara ... | ... | 183 | 147 | 133 | 107 | 120 | 70 | 53 | 35 | 97 | 1,837 |
| 119 | Amara ... | ... | 191 | 142 | 122 | 90 | 116 | 67 | 53 | 34 | 90 | 1,633 |
| 120 | — | ... | 186 | 144 | 124 | 90 | 108 | 63 | 50 | 35 | 88 | 1,619 |
| 121 | Amara ... | ... | 193 | 144 | 128 | 100 | 130 | 74 | 54 | 38 | 95 | 1,671 |

KABABISH.

| No. | Division. | H.L. | H.B. | Bi-z. | Bi-g. | F.L. | U.F.L. | N.L. | N.B. | Bi-m. | N-m. | Stature. |
|-----|------------|------|------|-------|-------|------|--------|------|------|-------|------|----------|
| 1 | Nurab ... | ... | 200 | 146 | 148 | — | 124 | — | 50 | 35 | — | 1,754 |
| 2 | Nurab ... | ... | 196 | 144 | 134 | — | 127 | — | 58 | 40 | — | 1,697 |
| 3 | Nurab ... | ... | 198 | 142 | 133 | — | 113 | — | 47 | 38 | — | 1,670 |
| 4 | Nurab ... | ... | 199 | 148 | 137 | — | 126 | — | 57 | 36 | — | 1,648 |
| 5 | Nurab ... | ... | 191 | 142 | 135 | — | 117 | — | 56 | 34 | — | 1,772 |
| 6 | Nurab ... | ... | 194 | 158 | 137 | — | 121 | — | 60 | 36 | — | 1,515 |
| 7 | Berara ... | ... | 197 | 152 | 138 | — | 139 | — | 62 | 40 | — | 1,680 |
| 8 | Berara ... | ... | 206 | 146 | 142 | — | 124 | — | 55 | 42 | — | 1,698 |
| 9 | Berara ... | ... | 194 | 144 | 138 | — | 124 | — | 61 | 41 | — | 1,810 |
| 10 | Nurab ... | ... | 200 | 144 | 130 | — | 113 | — | 51 | 35 | — | 1,686 |
| 11 | Nurab ... | ... | 190 | 138 | 125 | — | 125 | — | 59 | 37 | — | 1,791 |
| 12 | Nurab ... | ... | 190 | 146 | 141 | — | 110 | — | 49 | 40 | — | 1,684 |
| 13 | Nurab ... | ... | 190 | 144 | 132 | — | 114 | — | 53 | 36 | — | 1,708 |
| 14 | Nurab ... | ... | 199 | 138 | 126 | — | 110 | — | 50 | 35 | — | 1,673 |
| 15 | Nurab ... | ... | 198 | 150 | 132 | — | 117 | — | 49 | 43 | — | 1,742 |

¹ The divisions of the Amara are not given, the other names are those of Hadendoa divisions.

DINKA (DR. PIRRIE'S MEASUREMENTS, THE LAST SIX SUBJECTS BY C. G. S.).

| No. | Head length. | Head breadth. | Biauricular. | Bizygomatic. | Facial length. | Upper facial length. | Nasal length. | Nasal breadth. | Aur. vertical. | Aur. up. nasal. | Aur. alveolar. | Stature. |
|-----|--------------|---------------|--------------|--------------|----------------|----------------------|---------------|----------------|----------------|-----------------|----------------|----------|
| 1 | 204 | 149 | 122 | 149 | 120 | 76 | 48 | 46 | 140 | 102 | 112 | 1,925 |
| 2 | 203 | 135 | 121 | 136 | 130 | 78 | 49 | 40 | 138 | 98 | 104 | 2,044 |
| 3 | 195 | 149 | 120 | 134 | 122 | 72 | 37 | 37 | 195 ? | 146 | 157 | 1,530 |
| 4 | 193 | 135 | 113 | 132 | 105 | 68 | 42 | 41 | 138 | 97 | 106 | 1,790 |
| 5 | 198 | 142 | 117 | 134 | 114 | 67 | 40 | 43 | 130 | 98 | 106 | 1,780 |
| 6 | 289 | 145 | 116 | 147 | 109 | 65 | 45 | 42 | 130 | 97 | 105 | 1,790 |
| 7 | 194 | 142 | 115 | 128 | 106 | 66 | 42 | 35 | 135 | 97 | 100 | 1,750 |
| 8 | 189 | 148 | 113 | 138 | 107 | 62 | 41 | 40 | 132 | 94 | 100 | 1,680 |
| 9 | 200 | 154 | 123 | 213 ? | 113 | 65 | 46 | 40 | 140 | 100 | 100 | 1,800 |
| 10 | 198 | 147 | 122 | 148 | — | — | 43 | 40 | 130 | 94 | 106 | 1,780 |
| 11 | 194 | 137 | 114 | 134 | 104 | 58 | 37 | 41 | 132 | 93 | 95 | 1,760 |
| 12 | 184 | 142 | 116 | 137 | 114 | 73 | 43 | 37 | 134 | 95 | 99 | 1,710 |
| 13 | 198 | 138 | 116 | 137 | 115 | 65 | 42 | 42 | 142 | 92 | 98 | 1,760 |
| 14 | 186 | 140 | 114 | 137 | 115 | 67 | 41 | 41 | 138 | 95 | 104 | 1,800 |
| 15 | 199 | 144 | 116 | 142 | 116 | 69 | 44 | 42 | 141 | 99 | 108 | 1,850 |
| 16 | 198 | 140 | 119 | 139 | 115 | 72 | 44 | 40 | 140 | 95 | 110 | 1,690 |
| 17 | 194 | 145 | 116 | 142 | 104 | 64 | 41 | 38 | 138 | 90 | 101 | 1,740 |
| 18 | 186 | 140 | 113 | 134 | 115 | 67 | 44 | 41 | 145 | 100 | 101 | 1,840 |
| 19 | 191 | 143 | 110 | 136 | 104 | 64 | 48 | 44 | 137 | 95 | 104 | 1,700 |
| 20 | 198 | 142 | 120 | 138 | 114 | 68 | 50 | 38 | 138 | 100 | 106 | 1,790 |
| 21 | 190 | 138 | 116 | 131 | 99 | 58 | 40 | 46 | 141 | 99 | 107 | 1,740 |
| 22 | 191 | 138 | 116 | 132 | 118 | 67 | 44 | 45 | 134 | 97 | 110 | 1,690 |
| 23 | 196 | 144 | 117 | 132 | 113 | 64 | 39 | 41 | 147 | 94 | 102 | 1,780 |
| 24 | 203 | 144 | 114 | 133 | 115 | 61 | 41 | 39 | 138 | 99 | 105 | 1,730 |
| 25 | 194 | 135 | 114 | 135 | 119 | 69 | 42 | 48 | 128 | 97 | 115 | 1,700 |
| 26 | 199 | 137 | 116 | 135 | 109 | 69 | 44 | 42 | 138 | 92 | 94 | 1,800 |
| 27 | 198 | 145 | 127 | 145 | 104 | 69 | 46 | 44 | 130 | 95 | 104 | 1,845 |
| 28 | 206 | 143 | 116 | 138 | 110 | 67 | 35 | 41 | 141 | 94 | 100 | 1,710 |
| 29 | 194 | 135 | 116 | 132 | 114 | 75 | 50 | 45 | 138 | 93 | 100 | 1,880 |
| 30 | 193 | 138 | 113 | 131 | 105 | 64 | 37 | 38 | 131 | 93 | 107 | 1,705 |
| 31 | 189 | 144 | 122 | 137 | 97 | 52 | 35 | 44 | 134 | 96 | 97 | 1,960 |
| 32 | 208 | 143 | 123 | 144 | 122 | 69 | 44 | 48 | 148 | 102 | 112 | 2,000 |
| 33 | 190 | 153 | 123 | 144 | 119 | 67 | 41 | 42 | 131 | 102 | 116 | 1,830 |
| 34 | 196 | 142 | 117 | 135 | 105 | 63 | 44 | 39 | 147 | 98 | 105 | 1,920 |
| 35 | 202 | 153 | 126 | 146 | 126 | 72 | 49 | 41 | 143 | 100 | 107 | 1,890 |
| 36 | 213 ? | 119 ? | 107 | 138 | 115 | 63 | 37 | 40 | 141 | 93 | 95 | 1,750 |

DINKA—continued.

| No. | Head length. | Head breadth. | Biauricular. | Bizygomatic. | Facial length. | Upper facial length. | Nasal length. | Nasal breadth. | Aur. vertical. | Aur. up. nasal. | Aur. alveolar. | Stature. |
|-----|--------------|---------------|--------------|--------------|----------------|----------------------|---------------|----------------|----------------|-----------------|----------------|----------|
| 37 | 184 | 150 | 116 | 139 | 120 | 70 | 51 | 40 | 126 | 90 | 101 | 1,740 |
| 38 | 185 | 143 | 115 | 135 | 124 | 67 | 44 | 40 | 138 | 100 | 100 | 1,870 |
| 39 | — | 142 | 119 | 136 | 124 | 65 | 50 | 38 | 130 | 89 | 98 | 1,830 |
| 40 | 203 | — | 116 | 139 | 126 | 72 | — | 40 | 132 | 99 | 101 | 1,790 |
| 41 | 197 | 135 | 111 | 134 | 104 | 79 | 40 | 40 | 129 | 93 | 102 | 1,795 |
| 42 | 204 | 143 | 120 | 140 | 131 | 70 | 53 | 45 | 136 | 98 | 108 | 1,920 |
| 43 | 194 | 145 | 110 | 140 | 109 | 64 | 44 | 39 | 130 | 94 | 100 | 1,830 |
| 44 | 202 | 142 | 126 | 136 | 117 | 68 | 46 | 44 | 140 | 95 | 103 | 1,810 |
| 45 | 195 | 148 | 122 | 140 | 126 | 71 | 45 | 42 | 133 | 100 | 104 | 1,805 |
| 46 | 201 | 143 | 116 | 132 | 120 | 69 | 44 | 41 | 142 | 93 | 99 | 1,915 |
| 47 | 192 | 139 | 118 | 138 | 113 | 67 | 46 | 39 | 125 | 96 | 103 | 1,825 |
| 48 | 200 | 151 | 125 | 147 | 118 | 72 | 45 | 44 | 135 | 99 | 107 | 1,810 |
| 49 | 199 | 147 | 119 | 143 | 132 | 73 | 44 | 43 | — | 98 | 109 | 1,880 |
| 50 | 186 | 135 | 110 | 130 | 107 | 62 | 41 | 39 | 140 | 95 | 96 | 1,820 |
| 51 | 203 | 142 | 124 | 138 | 104 | 62 | 42 | 42 | 135 | 98 | 103 | 1,860 |
| 52 | 180 | 142 | 113 | 129 | 118 | 60 | 39 | 40 | 132 | 92 | 101 | 1,710 |
| 53 | 179 | 140 | 108 | 130 | 118 | 67 | 42 | 36 | 131 | 95 | 105 | 1,770 |
| 54 | 203 | 144 | 118 | 140 | 128 | 69 | 40 | 43 | 142 | 98 | 110 | 1,848 |
| 55 | 200 | 140 | 107 | 129 | 100 | 59 | 37 | 35 | 140 | 94 | 101 | 1,620 |
| 56 | 198 | 137 | 112 | 132 | 103 | 60 | 40 | 41 | 134 | 95 | 107 | 1,660 |
| 57 | 197 | 145 | 119 | 132 | 106 | 68 | 40 | 37 | 137 | 100 | 108 | 1,688 |
| 58 | 192 | 131 | 111 | 132 | 120 | 67 | 50 | 42 | 135 | 101 | 105 | 1,720 |
| 59 | 191 | 142 | 119 | 134 | 115 | 62 | 39 | 36 | 128 | 92 | 100 | 1,700 |
| 60 | 187 | 128 | 117 | 134 | 111 | 68 | 44 | 42 | 124 | 101 | 113 | — |

NUER (DR. PIRRIE'S MEASUREMENTS¹).

| No. | Head length. | Head breadth. | Biauricular. | Bizygomatic. | Facial length. | Upper facial length. | Nasal length. | Nasal breadth. | Aur. vertical. | Aur. up. nasal. | Aur. alveolar. | Stature. |
|-----|--------------|---------------|--------------|--------------|----------------|----------------------|---------------|----------------|----------------|-----------------|----------------|----------|
| 1 | 195 | 135 | 115 | 137 | — | — | 47 | 43 | 135 | 97 | 106 | 1,790 |
| 2 | 191 | 148 | 117 | 140 | 108 | 68 | 41 | 42 | 138 | 99 | 99 | 1,720 |
| 3 | 191 | 138 | 112 | 131 | 114 | 62 | 39 | 41 | 135 | 98 | 90 | 1,770 |
| 4 | 191 | 146 | 120 | 143 | 118 | 73 | 44 | 43 | 138 | 104 | 112 | 1,770 |
| 5 | 194 | 120 | 116 | 130 | 118 | 67 | 40 | 40 | 135 | 94 | 98 | 1,820 |
| 6 | 192 | 131 | 120 | 134 | 108 | 60 | 41 | 37 | 135 | 93 | 100 | 1,800 |
| 7 | 203 | 146 | 118 | 140 | 108 | 69 | 43 | 43 | 138 | 97 | 107 | 1,815 |
| 8 | 197 | 147 | 117 | 139 | 106 | 72 | 48 | 42 | 138 | 92 | 101 | 1,850 |
| 9 | 201 | 140 | 115 | 134 | 109 | 63 | 37 | 40 | 136 | 94 | 104 | 1,740 |
| 10 | 196 | 147 | 123 | 130 | 117 | 70 | 44 | 41 | 138 | 97 | 98 | 1,860 |
| 11 | 194 | 145 | 118 | 142 | 122 | 68 | 45 | 42 | 132 | 98 | 108 | 1,800 |
| 12 | 194 | 136 | 115 | 134 | 106 | 62 | 44 | 45 | 133 | 97 | 103 | 1,830 |
| 13 | 181 | 143 | 117 | 137 | 118 | 67 | 43 | 34 | 132 | 90 | 104 | 1,780 |

¹ The measurements of twenty-seven other Nuer measured by Dr. Pirrie are given in Professor Waterston's paper in the *Third Report of the Wellcome Laboratories*.

BENI AMER.

| No. | Division. | | | | C.L. | N.L. | F.I. | U.F.I. |
|-----|------------|-----|-----|-----|-------|-------|--------|---------|
| 45 | Ḥasa | ... | ... | ... | 72·28 | 84·44 | 78·23 | 43·55 |
| 46 | Afilenda | ... | ... | ... | 74·16 | 68 | 100 | 55 |
| 47 | Beit Māala | ... | ... | ... | 71·50 | 66·04 | 105 | 61·67 |
| 48 | Adhasri | ... | ... | ... | 73·12 | 70·59 | 92·50 | 52·50 |
| 49 | Adhasri | ... | ... | ... | 72·96 | 69·09 | 94·62 | 53·85 |
| 50 | Afilenda | ... | ... | ... | 68·65 | 72·55 | 92·06 | 53·17 |
| 51 | Ḥasa | ... | ... | ... | 76·80 | 71·43 | 93·50 | 54·47 |
| 52 | Beit Māala | ... | ... | ... | 79·90 | 72·55 | 86·96 | 49·27 |
| 53 | Beit Māala | ... | ... | ... | 75·52 | 72·55 | 91·34 | 48·03 |
| 54 | — | | | | 69·35 | 78 | 84·89 | 43·88 |
| 55 | — | | | | 74 | 74·55 | 83·58 | 47·76 |
| 56 | Afilenda | ... | ... | ... | 83·62 | 67·27 | 87·41 | 51·11 |
| 57 | Adhasri | ... | ... | ... | 71·36 | 91·07 | 97·60 | 53·60 |
| 58 | Ḥasa | ... | ... | ... | 79·14 | 67·27 | 91·79 | 48·51 |
| 59 | Afilenda | ... | ... | ... | 72·82 | 72·55 | 89·47 | 48·87 |
| 60 | Adhasri | ... | ... | ... | 74·19 | 69·09 | 91·47 | 50·39 |
| 61 | Adhasri | ... | ... | ... | 74·47 | 80·39 | 101·74 | 54·78 |
| 62 | — | | | | 73 | 73·08 | 93·44 | 53·28 |
| 63 | Beit Māala | ... | ... | ... | 71·43 | 58·33 | 93·23 | 52·63 ? |
| 64 | Beit Māala | ... | ... | ... | 73·68 | 64·81 | 95·24 | 55·56 |
| 65 | Afilenda | ... | ... | ... | 78·38 | 73·58 | 91·80 | 52·46 |
| 66 | Adhasri | ... | ... | ... | 73·37 | 67·27 | 97·64 | 51·97 |
| 67 | Beit Māala | ... | ... | ... | 76·34 | 62·75 | 96·77 | 52·42 |
| 68 | Adhasri | ... | ... | ... | 77·89 | 63·64 | 96·21 | 54·55 |
| 69 | Adhasri | ... | ... | ... | 75·39 | 64 | 81·75 | 46·03 |
| 70 | Ḥasa | ... | ... | ... | 71·13 | 60 | 95·45 | 47·73 |
| 71 | Habab | ... | ... | ... | 75·94 | 63·64 | 92·59 | 52·59 |
| 72 | Beit Māala | ... | ... | ... | 75·90 | 80·77 | 95·45 | 51·52 |
| 73 | Habab | ... | ... | ... | 73·68 | 70·37 | 93·85 | 50·77 |
| 74 | Habab | ... | ... | ... | 77·35 | 64 | 97·50 | 54·17 |
| 75 | Adhasri | ... | ... | ... | 73·47 | 65 | 103·36 | 59·66 |
| 76 | Kantebai | ... | ... | ... | 72·63 | 73·47 | 92·80 | 48 |
| 77 | Habab | ... | ... | ... | 81·05 | 62·96 | 92·59 | 51·85 |
| 78 | Habab | ... | ... | ... | 74·09 | 81·25 | 86·92 | 48·46 |
| 79 | Habab | ... | ... | ... | 75·66 | 73·08 | 95·31 | 51·56 |
| 80 | Habab | ... | ... | ... | 74·47 | 71·43 | 91·13 | 46·77 |
| 81 | Habab | ... | ... | ... | 73·30 | 84·31 | 92·86 | 55·56 |
| 82 | Beit Māala | ... | ... | ... | 79·57 | 61·40 | 90·30 | 50 |
| 83 | Habab | ... | ... | ... | 71·65 | 63·46 | 93·55 | 50 |
| 84 | Habab | ... | ... | ... | 79·35 | 72·92 | 87·69 | 57·02 |

BENI AMER—*continued.*

| No. | Division. | | | | C.L. | N.L. | F.L. | U.F.L. |
|-----|-----------|-----|-----|-----|-------|-------|-------|--------|
| 87 | Hakolab | ... | ... | ... | 78·89 | 66·67 | 96·67 | 50·83 |
| 99 | Husa | ... | ... | ... | 73·20 | 72·34 | 84·38 | 44·53 |
| 100 | Habab | ... | ... | ... | 83·87 | 73·33 | 91·13 | 50 |
| 101 | Adhasari | ... | ... | ... | 74 | 67·92 | 90·30 | 50 |
| 102 | Habab | ... | ... | ... | 73·30 | 68·63 | 89·39 | 48·48 |
| 103 | Habab | ... | ... | ... | 67·98 | 69·64 | 96·15 | 55·38 |
| 104 | Habab | ... | ... | ... | 72·82 | 74 | 89·06 | 49·22 |
| 105 | Habab | ... | ... | ... | 70·71 | 76·60 | 81·62 | 44·11 |
| 106 | Habab | ... | ... | ... | 72·16 | 68 | 94·44 | 53·97 |
| 115 | — | | | | 75·77 | 60·78 | 88·46 | 50·77 |
| 116 | — | | | | 76·50 | 77·78 | 89·60 | 46·40 |

HADENDOA AND AMARA.

| No. | Division. ¹ | | | | C.L. | N.L. | F.L. | U.F.L. |
|-----|------------------------|-----|-----|-----|-------|-------|--------|--------|
| 16 | Amara | ... | ... | ... | 78·13 | 41·51 | 89·93 | 52·51 |
| 17 | Amara | ... | ... | ... | 78·06 | 62·26 | 96·77 | 54·45 |
| 18 | Amirab | ... | ... | ... | 79·38 | 72·22 | 111·27 | 49·62 |
| 19 | Amirab | ... | ... | ... | 64·42 | 63·64 | 100 | 53·23 |
| 20 | Amirab | ... | ... | ... | 73·03 | 68·75 | 87·57 | 53·91 |
| 21 | Amirab | ... | ... | ... | 77·66 | 83·72 | 84·92 | 46·83 |
| 22 | Amirab | ... | ... | ... | 75·27 | 76·60 | 86·40 | 48 |
| 23 | Bishariab | ... | ... | ... | 78·07 | 63·64 | 86·47 | 49·62 |
| 24 | Bishariab | ... | ... | ... | 76·06 | 67·27 | 112·40 | 49·61 |
| 25 | Amirab | ... | ... | ... | 77·89 | 76 | 87·31 | 51·49 |
| 26 | Amirab | ... | ... | ... | 74·63 | 56·67 | 96·43 | 56·42 |
| 27 | Amirab | ... | ... | ... | 74·48 | 70·91 | 90·30 | 52·99 |
| 28 | Amirab | ... | ... | ... | 77·42 | 83·72 | 88 | 48·80 |
| 29 | Amirab | ... | ... | ... | 77·08 | 70·37 | 95·97 | 58·06 |
| 30 | Amirab | ... | ... | ... | 78·53 | 72·92 | 96·58 | 56·41 |
| 31 | Bishariab | ... | ... | ... | 75·98 | 76 | 85·27 | 42·64 |
| 32 | Amirab | ... | ... | ... | 81·77 | 72 | 87·50 | 50·78 |
| 33 | Amirab | ... | ... | ... | 76·53 | 78·72 | 86·03 | 44·85 |
| 34 | Amirab | ... | ... | ... | 71·50 | 72·73 | 100·77 | 53·85 |
| 35 | Bishariab | ... | ... | ... | 77·95 | 65·38 | 88·37 | 49·61 |

¹ The divisions of the Amara are not given, the other names are those of Hadendoa divisions.

HADENDOA AND AMARA.—continued.

| No. | Division. ¹ | C.I. | N.I. | F.I. | U.F.I. |
|-----|------------------------|-------|-------|--------|--------|
| 36 | Amirab | 78·31 | 72 | 99·17 | 54·17 |
| 37 | Amirab | 74·47 | 76 | 90·77 | 50 |
| 38 | Amirab | 76·84 | 76·47 | 98·48 | 53·03 |
| 39 | Amirab | 74·74 | 75·93 | 95·97 | 55·65 |
| 40 | Amirab | 78·72 | 72·92 | 88·89 | 47·62 |
| 41 | — | 76·29 | 78·43 | 94·03 | 50·75 |
| 42 | Amirab | 76·04 | 74 | 90·77 | 52·31 |
| 43 | Amirab | 77·66 | 73·21 | 84·29 | 46·42 |
| 44 | Amirab | 73·30 | 83·33 | 100 | 56·56 |
| 85 | Hakolab | 75·76 | 63·79 | 94·62 | 53·85 |
| 86 | Amara | 81·11 | 75 | 89·84 | 49·22 |
| 88 | Sherab | 73·40 | 76 | 91·54 | 46·92 |
| 89 | Sherab | 74·19 | 73·08 | 88·72 | 48·87 |
| 90 | Amara (Nurab) | 77·89 | 73·08 | 84·06 | 47·82 |
| 91 | Ashraf | 78·57 | 69·09 | 92·54 | 50·75 |
| 92 | Gumilab | 73·47 | 74·07 | 93·18 | 50·76 |
| 93 | Kololaib | 75·26 | 82·35 | 89·92 | 49·61 |
| 94 | Adel Gaur | 74·74 | 71·70 | 85·16 | 48·44 |
| 95 | Gumilab | 78·26 | 73·21 | 102·46 | 57·38 |
| 96 | Amara (Nurab) | 76·68 | 72·55 | 95·90 | 58·20 |
| 97 | Abdelwab | 79·79 | 72·55 | 92·74 | 52·42 |
| 98 | Kamilab | 77·17 | 84·44 | 88·64 | 46·21 |
| 107 | Amara | 75·51 | 74·07 | 95·38 | 55·38 |
| 108 | Amara | 74·23 | 64·71 | 86·72 | — |
| 109 | Amara | 79·59 | 60·34 | 97·69 | 54·62 |
| 110 | Amara | 77·72 | 77·55 | 91·94 | 50 |
| 111 | — | 78·72 | 67·31 | 90 | 53·85 |
| 112 | Amara | 78·35 | 75 | 94·03 | 51·49 |
| 113 | Amara | 75·27 | 76·60 | 95·08 | 52·46 |
| 117 | — | 74·36 | 60·34 | 97·76 | 58·21 |
| 118 | Amara | 80·33 | 66·04 | 90·23 | 52·63 |
| 119 | Amara | 74·35 | 64·15 | 95·08 | 54·92 |
| 120 | — | 77·42 | 70 | 87·10 | 50·81 |
| 121 | Amara | 74·61 | 70·37 | 101·56 | 57·81 |

¹ The divisions of the Amara are not given, the other names are those of Hadendoa divisions.

KABABISH.

| No. | Division. | | | | C.I. | N.I. | F.I. | U.F.I. |
|-----|-----------|-----|-----|-----|-------|-------|--------|--------|
| 1 | Nurab | ... | ... | ... | 73 | 70 | 83.78 | — |
| 2 | Nurab | ... | ... | ... | 73.47 | 68.97 | 94.78 | — |
| 3 | Nurab | ... | ... | ... | 71.72 | 80.85 | 84.96 | — |
| 4 | Nurab | ... | ... | ... | 74.37 | 63.16 | 91.97 | — |
| 5 | Nurab | ... | ... | ... | 74.35 | 60.71 | 86.67 | — |
| 6 | Nurab | ... | ... | ... | 81.44 | 60 | 88.32 | — |
| 7 | Berara | ... | ... | ... | 77.16 | 64.52 | 100.72 | — |
| 8 | Berara | ... | ... | ... | 70.87 | 76.36 | 87.32 | — |
| 9 | Berara | ... | ... | ... | 74.23 | 67.21 | 89.86 | — |
| 10 | Nurab | ... | ... | ... | 72 | 68.63 | 86.92 | — |
| 11 | Nurab | ... | ... | ... | 72.63 | 62.71 | 100 | — |
| 12 | Nurab | ... | ... | ... | 76.84 | 81.63 | 78.01 | — |
| 13 | Nurab | ... | ... | ... | 75.79 | 67.92 | 86.36 | — |
| 14 | Nurab | ... | ... | ... | 69.35 | 70 | 87.30 | — |
| 15 | Nurab | ... | ... | ... | 75.76 | 87.76 | 88.64 | — |

DINKA.

| No. | C.I. | H.I. | N.I. | F.I. | U.F.I. |
|-----|------|------|-------|------|--------|
| 1 | 73 | 68.6 | 95.8 | 80.5 | 51.0 |
| 2 | 66.6 | 68 | 81.6 | 95.5 | 57.3 |
| 3 | 76.4 | 1 | 100 | 91.0 | 53.7 |
| 4 | 69.9 | 71.5 | 97.6 | 79.5 | 51.5 |
| 5 | 71.7 | 65.7 | 107.5 | 90.3 | 50 |
| 6 | — | — | 93.3 | 74.1 | 44.2 |
| 7 | 73.2 | 69.6 | 83.3 | 82.8 | 51.5 |
| 8 | 78.3 | 69.8 | 97.5 | 77.5 | 44.9 |
| 9 | 77 | 70 | 86.9 | — | — |
| 10 | 74.2 | 65.7 | 93.0 | — | — |
| 11 | 70.6 | 68 | 110.8 | 77.6 | 43.2 |
| 12 | 77.2 | 72.8 | 86.0 | 83.2 | 53.2 |
| 13 | 69.7 | 71.7 | 100 | 83.9 | 47.4 |
| 14 | 75.3 | 74.2 | 100 | 83.9 | 49.9 |
| 15 | 72.4 | 70.9 | 95.4 | 81.6 | 48.5 |
| 16 | 70.7 | 70.7 | 90.9 | 82.7 | 51.8 |
| 17 | 74.7 | 71.1 | 92.6 | 73.2 | 45.1 |
| 18 | 75.3 | 78 | 93.1 | 85.8 | 50 |
| 19 | 74.9 | 71.7 | 91.6 | 76.4 | 47.0 |
| 20 | 71.7 | 66.7 | 76 | 82.6 | 49.3 |

DINKA—continued.

| No. | C.I. | H.I. | N.I. | F.I. | U.F.I. |
|-----|------|------|-------|------|--------|
| 21 | 72.6 | 74.2 | 115 | 75.5 | 44.2 |
| 22 | 72.3 | 70.2 | 102.2 | 89.3 | 50.7 |
| 23 | 73.5 | 75 | 105.1 | 85.6 | 48.4 |
| 24 | 70.9 | 63 | 95.1 | 86.4 | 45.8 |
| 25 | 69.6 | 66 | 114.2 | 88.1 | 51.1 |
| 26 | 68.8 | 69.3 | 95.4 | 80.7 | 51.1 |
| 27 | 73.2 | 65.7 | 95.6 | 71.7 | 47.6 |
| 28 | — | 68 | 117.1 | 79.7 | 48.5 |
| 29 | 69.6 | 71.1 | 90 | 86.3 | 56.8 |
| 30 | 71.5 | 67.9 | 102.7 | 80.1 | 48.8 |
| 31 | 76.2 | 70.9 | 125.7 | 70.8 | 37.9 |
| 32 | 68.7 | 71.1 | 109.0 | 84.7 | 47.9 |
| 33 | 80.5 | 68.9 | 102.4 | 82.6 | 46.5 |
| 34 | 72.4 | 75 | 88.6 | 77.7 | 46.6 |
| 35 | 75.7 | 70.8 | 83.6 | 86.3 | 49.3 |
| 36 | — | 66.1 | 108.1 | 83.3 | 45.6 |
| 37 | 81.5 | 68.5 | 78.4 | 86.3 | 50.4 |
| 38 | 77.3 | 74.6 | 90.9 | 91.8 | 49.6 |
| 39 | — | — | 76 | 91.1 | 47.7 |
| 40 | — | 65 | — | 90.6 | 51.8 |
| 41 | 68.5 | 65.5 | 100 | 77.6 | 58.9 |
| 42 | 70.1 | 66.7 | 84.9 | 93.5 | 50.0 |
| 43 | 74.7 | 67 | 88.6 | 77.8 | 45.7 |
| 44 | 70.3 | 69.3 | 95.6 | 86.0 | 50 |
| 45 | 75.9 | 68.2 | 93.3 | 90 | 50.7 |
| 46 | 71.1 | 70.6 | 93.1 | 90.9 | 52.2 |
| 47 | 72.4 | 65.1 | 84.7 | 81.8 | 48.5 |
| 48 | 75.5 | 67.5 | 97.7 | 80.2 | 49 |
| 49 | 73.9 | — | 97.7 | 92.3 | 51 |
| 50 | 72.6 | 75.3 | 95.1 | 82.3 | 47.6 |
| 51 | 70 | 66.5 | 100 | 75.3 | 44.9 |
| 52 | 78.9 | 73.3 | 102.5 | 91.4 | 46.5 |
| 53 | 78.2 | 73.2 | 85.7 | 90.7 | 51.5 |
| 54 | 70.9 | 70 | 107.5 | 91.4 | 49.3 |
| 55 | 70 | 70 | 94.5 | 77.5 | 45.7 |
| 56 | 69.2 | 67.7 | 102.5 | 78.0 | 45.4 |
| 57 | 73.6 | 69.5 | 92.5 | 80.3 | 51.5 |
| 58 | 68.2 | 70.3 | 84 | 90.9 | 50.7 |
| 59 | 74.3 | 67 | 92.3 | 85.8 | 46.2 |
| 60 | 68.4 | 66.3 | 95.4 | 82.8 | 50.7 |

NUER.

| No. | C.I. | V.I. | N.I. | F.I. | U.F.I. | Alve. I. |
|-----|------|------|-------|------|--------|----------|
| 1 | 69.2 | 69.2 | 89 | — | — | 109 |
| 2 | 77.5 | 72.3 | 105 | 90 | 48.6 | 100 |
| 3 | 72.3 | 70.7 | 105 | 98 | 47.3 | 94.8 |
| 4 | 76.4 | 72.3 | 91 | 90 | 51.0 | 107 |
| 5 | 67 | 69.6 | 95 | 102 | 51.5 | 104 |
| 6 | 68.1 | 70.3 | 88 | 88 | 44.7 | 107 |
| 7 | 71.9 | 68 | 97 | 80 | 49.3 | 110 |
| 8 | 74.6 | 70.1 | 89 | 84 | 51.8 | 109 |
| 9 | 69.7 | 67.7 | 108 | 89 | 47.0 | 110 |
| 10 | 75 | 70.4 | 93.1 | 90 | 53.8 | 101 |
| 11 | 74.7 | 68 | 93.3 | 85.9 | 47.9 | 110 |
| 12 | 70.1 | 68.6 | 102.2 | 79.1 | 46.2 | 106 |
| 13 | 79 | 72.9 | 79.0 | 86.1 | 49.9 | 115 |

BENI AMER.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|----------|--------|--------|----------|--------------|-----------------|---------------|----------|
| H.L. | ... 51 | 190.49 | 6.20 | ±.58 | ±.41 | 3.25 | C. G. S. |
| H.B. | ... 51 | 142.25 | 5.37 | ±.50 | ±.35 | 3.77 | |
| C.I. ... | ... 51 | 74.70 | 3.42 | ±.32 | ±.22 | 4.56 | |
| N.L.... | ... 51 | 51.96 | 3.41 | ±.32 | ±.22 | 6.56 | |
| N.B.... | ... 51 | 36.57 | 3.36 | ±.31 | ±.22 | 9.18 | |
| N.I. ... | ... 51 | 70.52 | 6.75 | ±.63 | ±.45 | 9.57 | |
| F.L. ... | ... 51 | 117.70 | 5.91 | ±.55 | ±.39 | 5.02 | |
| F.B. | ... 51 | 127.84 | 5.42 | ±.51 | ±.36 | 4.23 | |
| F.I. ... | ... 51 | 92.12 | 5.27 | ±.49 | ±.35 | 5.72 | |
| U.F.L. | ... 51 | 65.13 | 4.23 | ±.39 | ±.28 | 6.49 | |
| U.F.I. | ... 51 | 51.21 | 3.82 | ±.36 | ±.25 | 7.45 | |
| Stature | ... 51 | 1,643 | 58 | ±5 | ±4 | 4 | |

HADENDOA AND AMARA.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|----------|--------|--------|----------|--------------|-----------------|---------------|----------|
| H.L. | ... 54 | 189.97 | 5.72 | ± 52 | ± 37 | 3.01 | C. G. S. |
| H.B. | ... 54 | 145.11 | 5.25 | ± 48 | ± 34 | 3.61 | |
| C.I. ... | ... 54 | 76.39 | 2.90 | ± 26 | ± 18 | 3.79 | |
| N.L. | ... 54 | 51.86 | 3.59 | ± 32 | ± 23 | 6.92 | |
| N.B. | ... 54 | 36.95 | 3.08 | ± 28 | ± 19 | 8.33 | |
| N.I. | ... 54 | 71.58 | 7.33 | ± 67 | ± 47 | 10.24 | |
| F.L. ... | ... 54 | 119.67 | 8.26 | ± 75 | ± 53 | 6.90 | |
| F.B. | ... 54 | 129 | 5.22 | ± 47 | ± 33 | 4.04 | |
| F.I. ... | ... 54 | 92.78 | 6.13 | ± 56 | ± 35 | 6.60 | |
| U.F.L. | ... 53 | 66.94 | 4.32 | ± 40 | ± 28 | 6.45 | |
| U.F.I. | ... 52 | 51.80 | 3.61 | ± 33 | ± 23 | 6.96 | |
| Stature | ... 54 | 1,676 | 60 | ± 5 | ± 4 | 4 | |

KABABISH.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|----------|--------|--------|----------|--------------|-----------------|---------------|-----------------------|
| H.L. | ... 24 | 193.91 | 5.27 | ± 72 | ± 51 | 2.71 | { Atkey & C. G. S. |
| H.B. | ... 24 | 143.96 | 5.08 | ± 70 | ± 49 | 3.52 | |
| C.I. ... | ... 24 | 74.29 | 2.55 | ± 35 | ± 24 | 3.43 | |
| N.L. | ... 24 | 53.5 | 4.61 | ± 63 | ± 44 | 8.61 | |
| N.B. | ... 24 | 37 | 2.82 | ± 38 | ± 27 | 7.62 | |
| N.I. | ... 24 | 69.70 | 7.54 | ± 104 | ± 73 | 10.81 | |
| F.L. | ... 24 | 118.67 | 5.56 | ± 76 | ± 54 | 4.68 | |
| F.B. | ... 24 | 134.29 | 5.18 | ± 71 | ± 50 | 3.84 | |
| F.I. | ... 24 | 88.83 | 4.87 | ± 67 | ± 47 | 5.48 | |
| U.F.L. | ... — | — | — | — | — | — | |
| U.F.I. | ... — | — | — | — | — | — | |
| Stature | ... 23 | 1,709 | 56 | ± 8 | ± 6 | 3 | |

BARABRA.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|-------------|-----|--------|----------|--------------|-----------------|---------------|---------|
| C.I. ... | 89 | 76.18 | 3.53 | $\pm .25$ | $\pm .17$ | 4.63 | Chantre |
| N.I. ... | 89 | 82.67 | 9.47 | $\pm .67$ | $\pm .47$ | 11.45 | |
| F.I. ... | 89 | 100.83 | 5.51 | $\pm .39$ | $\pm .27$ | 5.46 | |
| Stature ... | 70 | 168 | 7 | $\pm .52$ | $\pm .37$ | 3.91 | |

SHILLUK.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|------------|-----|--------|----------|--------------|-----------------|---------------|----------------|
| H.L. ... | 21 | 195 | 5.54 | $\pm .81$ | $\pm .57$ | 2.84 | Myers, Pirrie. |
| H.B. ... | 21 | 139.48 | 5.01 | $\pm .73$ | $\pm .52$ | 3.51 | " " |
| C.I. ... | 21 | 71.3 | 3.04 | $\pm .44$ | $\pm .31$ | 4.26 | " " |
| N.L. ... | 11 | 41.91 | 2.57 | $\pm .52$ | $\pm .37$ | 6.13 | Myers. |
| N.B. ... | 11 | 39 | 3.38 | $\pm .68$ | $\pm .48$ | 8.66 | " |
| N.I. ... | 11 | 93.36 | 8.88 | ± 1.66 | ± 1.27 | 9.51 | " |
| F.L. ... | 18 | 110.44 | 6.20 | $\pm .98$ | $\pm .69$ | 5.61 | Myers, Pirrie. |
| F.B. ... | 18 | 134.77 | 4.15 | $\pm .66$ | $\pm .46$ | 3.07 | " " |
| F.I. ... | 19 | 83.27 | 8.37 | ± 1.29 | $\pm .91$ | 10.05 | " " |
| U.F.L. | — | — | — | — | — | — | — |
| U.F.I. ... | — | — | — | — | — | — | — |
| Stature | 14 | 1,776 | 53 | ± 9 | ± 7 | 3 | Myers, Pirrie. |

DINKA.

| | No. | Av. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|-------------|-----|--------|----------|--------------|-----------------|---------------|--------------------------------------|
| H.L. ... | 79 | 194.08 | 6.59 | $\pm .50$ | $\pm .35$ | 3.39 | { Pirrie, Myers & C. G. S. |
| H.B. ... | 79 | 141.19 | 5.44 | $\pm .41$ | $\pm .29$ | 3.85 | " |
| C.I. ... | 148 | 72.71 | 3.70 | $\pm .20$ | $\pm .14$ | 5.08 | { Pirrie, Mochi, Myers & C. G. S. |
| N.L. ... | 82 | 42.90 | 4.19 | $\pm .31$ | $\pm .22$ | 9.76 | { Pirrie, Myers & C. G. S. |
| N.B. ... | 82 | 40.82 | 2.96 | $\pm .22$ | $\pm .15$ | 7.24 | " |
| N.I. ... | 85 | 91.63 | 12.96 | $\pm .94$ | $\pm .67$ | 14.14 | { Pirrie, Mochi, Myers & C. G. S. |
| F.L. ... | 81 | 112.85 | 8.25 | $\pm .61$ | $\pm .43$ | 7.31 | { Pirrie, Myers & C. G. S. |
| F.B. ... | 81 | 135.55 | 5.05 | $\pm .37$ | $\pm .26$ | 3.72 | " |
| F.I. ... | 85 | 86 | 7.89 | $\pm .57$ | $\pm .40$ | 8.17 | " |
| U.F.L. ... | — | — | — | — | — | — | — |
| U.F.I. ... | — | — | — | — | — | — | — |
| Stature ... | 116 | 1,786 | 97 | ± 6 | ± 4 | 5 | { Pirrie, Myers & C. G. S. |

NUER.

| | No. | Average. | St. Dev. | Er. of Mean. | Er. of St. Dev. | Coef. of Var. | Source. |
|---------|--------|----------|----------|--------------|-----------------|---------------|---------|
| H.L. | ... 40 | 194.05 | 5.51 | $\pm .58$ | $\pm .41$ | 2.83 | Pirrie |
| H.B. | ... 40 | 142.55 | 4.73 | $\pm .50$ | $\pm .35$ | 3.31 | " |
| C.L. | ... 40 | 73.55 | 3.28 | $\pm .35$ | $\pm .24$ | 4.45 | " |
| N.L. | ... 40 | 42.47 | 4.38 | $\pm .40$ | $\pm .33$ | 10.31 | " |
| N.B. | ... 40 | 41.2 | 2.75 | $\pm .29$ | $\pm .20$ | 6.67 | " |
| N.I. | ... 40 | 100.08 | 11.53 | ± 1.23 | $\pm .86$ | 11.52 | " |
| F.L. | ... | | | | | | |
| F.B. | ... | | | | | | |
| F.I. | ... 12 | 83.16 | 5.46 | ± 1.06 | $\pm .73$ | 6.56 | " |
| U.F.L. | ... | | | | | | |
| U.F.I. | ... | | | | | | |
| Stature | ... 39 | 1,806 | 70 | ± 8 | ± 5 | 3 | " |

APPENDIX II.

Dr. Bowley has kindly supplied the following note on the results of his examination of Dinka measurements.

For each of the three groups (C.L., N.I., and stature) that normal curve is selected which has the average of the standard deviation of the group. Definite lines of division are then taken in the normal curve as follows:—

| | | | | | | | Most probable number of instances. |
|-----------------------------|----------------------|-----|-----|----------------------|-----|-----|------------------------------------|
| Between average and average | $+\frac{1}{2}\sigma$ | ... | ... | ... | ... | ... | .192 of n |
| Average | $+\frac{1}{2}\sigma$ | " | " | $+\sigma$ | ... | ... | .149 of n |
| " | σ | " | " | $\frac{3}{2}\sigma$ | ... | ... | .092 of n |
| " | $\frac{3}{2}\sigma$ | " | " | 2σ | ... | ... | .044 of n |
| " | 2σ | " | " | $2\frac{1}{2}\sigma$ | ... | ... | .017 of n |
| " | $2\frac{1}{2}\sigma$ | " | " | 3σ | ... | ... | .005 of n |
| Outside average | $+3\sigma$ | ... | ... | ... | ... | ... | .001 of n |
| | | | | | | | .500 of n |

where n is the number of observations and σ is the standard deviation. A precisely similar distribution is to be found for negative deviations. This

scheme is then fitted on to the observations. Thus for C.I. the average is 72.71, $\sigma = 3.70$, $n = 148$. Between $72.71 + 3.70 = 76.41$ and $72.71 + \frac{3}{2} \text{ of } 3.70 = 78.26$, the most probable number is .092 of $148 = 13.6$. Actually there are eleven at 77 (*i.e.*, between 76.5 and 77.5), four at 78 of which three may be expected to be between 77.5 and 78.26, making fourteen in the group, in this case the nearest integer to the most probable.

The results are as follows:—

| | C.I. | | N.I. | | Stature. |
|--|-----------------|--|------------------|--|-----------------------------|
| | $n = 148$ | | $n = 85$ | | $n = 116$ |
| | $\sigma = 3.70$ | | $\sigma = 12.96$ | | $\sigma = 9.66 \text{ cm.}$ |
| | av. = 72.71 | | av. = 91.63 | | av. = 178.6 |

| Average. | Observed. | Expected. | Observed. | Expected. | Observed. | Expected. |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | x_1 | x_2 | | | | |
| + > 3σ | 2* | .1 | 0 | .1 | 0 | .1 |
| + $2\frac{1}{2}\sigma$ to 3σ | 1 | .7 | 1 | .4 | 2* | .6 |
| 2 σ " $2\frac{1}{2}\sigma$ | 2 | 2.5 | 0 | 1.4 | 1 | 1.9 |
| $1\frac{1}{2}\sigma$ " 2σ | 4 | 6.5 | 4 | 3.7 | 1* | 5.1 |
| 1 σ " $1\frac{1}{2}\sigma$ | 14 | 13.6 | 6 | 7.8 | 6* | 10.7 |
| $\frac{1}{2}\sigma$ " 1σ | 18 | 22.1 | 13 | 12.7 | 22* | 17.3 |
| 0 " $\frac{1}{2}\sigma$ | 30 | 28.4 | 27* | 16.3 | 24 | 22.3 |
| 0 " $-\frac{1}{2}\sigma$ | 30 | 28.4 | 12* | 16.3 | 25 | 22.3 |
| - $\frac{1}{2}\sigma$ " 1σ | 25 | 22.1 | 8* | 12.7 | 23* | 17.3 |
| - 1 σ " $1\frac{1}{2}\sigma$ | 13 | 13.6 | 6 | 7.8 | 6* | 10.7 |
| - $1\frac{1}{2}\sigma$ " 2σ | 7 | 6.5 | 4 | 3.7 | 4 | 5.1 |
| - 2 σ " $2\frac{1}{2}\sigma$ | 2 | 2.5 | 3* | 1.4 | 1 | 1.9 |
| - $2\frac{1}{2}\sigma$ " 3σ | 0 | .7 | 1 | .4 | 1 | .6 |
| - > " 3σ | 0 | .1 | 0 | .1 | 0 | .1 |

For any compartment taken singly the standard deviation of error due to random sampling is $\sqrt{p(1-p)n}$, where n is the whole number in the group and pn the most probable number in the compartment. The numbers marked * differ by more than the standard deviation, but only the two giants in the first group seriously. A test more refined in principle, but unfortunately rough in its application, is as follows: form for each compartment the quantity $\frac{\epsilon^2}{x_2}$ where $\epsilon = x_2 - x_1$; the sum for the group of these quantities is a measure of the goodness of the fit, and Professor Karl Pearson has shown how to measure the probability that such observations would come by random sampling from an assigned frequency group. Putting aside the two giants of group one, it is found that the first group (C.I.) is an extremely good fit; that deviations as great as are found in the second group (N.I.) are about as likely as not to occur, and that the chances are only



FIG. 3.—HADENDOA TEMPORARY SHELTER.



FIG. 2.—HADENDOA ENCAMPMENT (SINKATKENAB).



FIG. 1.—A DENI AMER VILLAGE.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 2.—GROUP OF HADENDOA (BEDAWID).



FIG. 1.—GROUP OF BEJA, IN FRONT ARE THREE BENI AMER, BEHIND THEM TWO HADENDOA.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.—TYPE 87.



FIG. 2.—TYPE 87.



FIG. 3.—TYPE 47.



FIG. 4.—TYPE 47.



FIG. 5, TYPE 62.



FIG. 6.—TYPE 62.

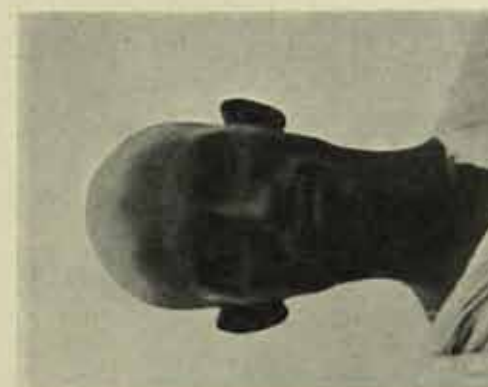


FIG. 7.—TYPE 63.



FIG. 8.—TYPE 63.

BENI AMER TYPES.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.—TYPE 16.

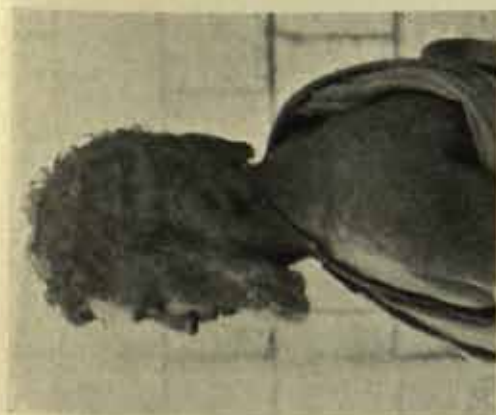


FIG. 2.—TYPE 16.



FIG. 3.—TYPE 17.



FIG. 4.—TYPE 17.



FIG. 5.—TYPE 27.



FIG. 6.—TYPE 27.



FIG. 7.—TYPE 27.



FIG. 8.—TYPE 27.

HADENDOA TYPES.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.—TYPE 108.



FIG. 2.—TYPE 108.



FIG. 3.—TYPE 86.



FIG. 4.—TYPE 86.



FIG. 5.—TYPE 29.



FIG. 6.—TYPE 29.



FIG. 7.—TYPE 91.



FIG. 8.—TYPE 91.

HADENDOA TYPES.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.—MUMIA FROM TWELFTH DYNASTY TOMB.



FIG. 2.—HEAD OF RAMESES II.
(TUBIN MUSEUM).

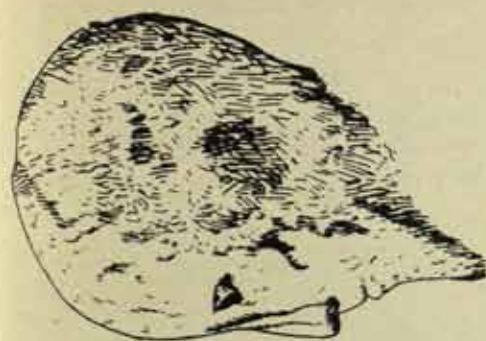


FIG. 4.—IVORY HEAD OF PROTODYNASTIC
EGYPTIAN FROM HIERAKONTOLIS (QUIDELL).

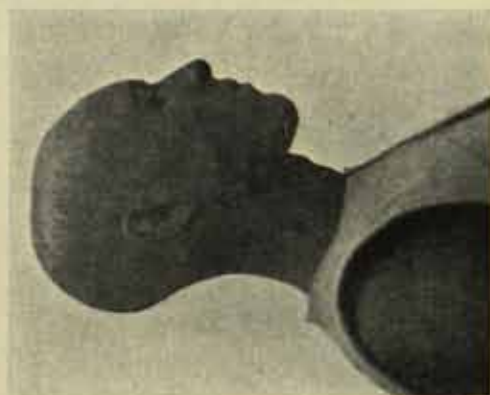


FIG. 3.—HEAD OF DENI AMER SHOWING
RESEMBLANCE TO RAMESES II.

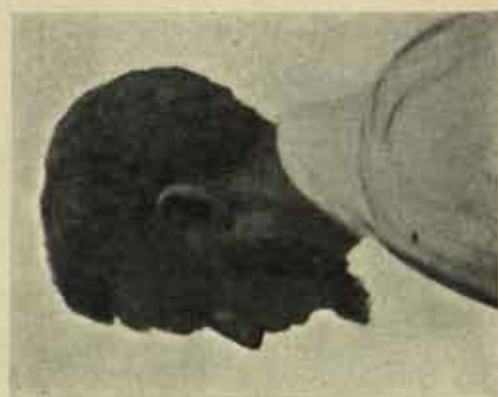


FIG. 5.—HEAD OF DENI AMER SHOWING
CHIN-TUFT BEARD.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.

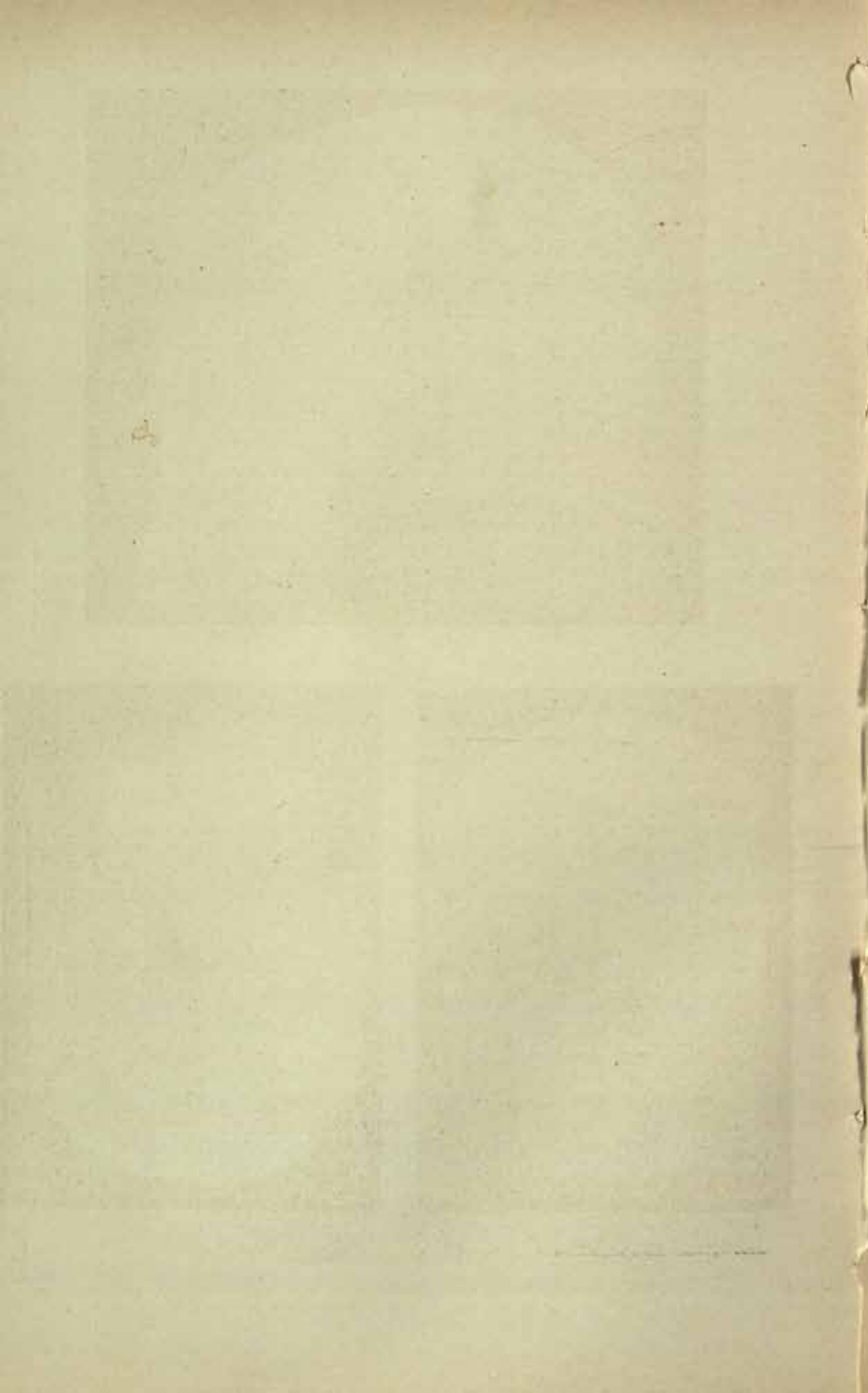




FIG. 1.

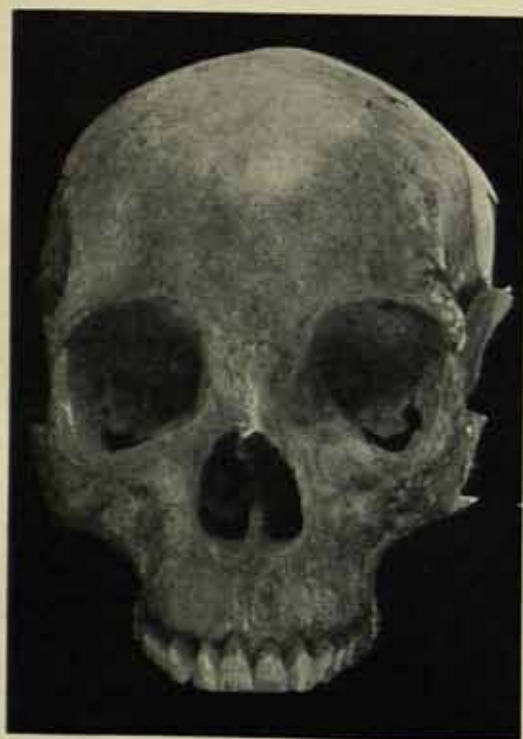


FIG. 2.



FIG. 3.

HADENDOA SKULL NO. I.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.

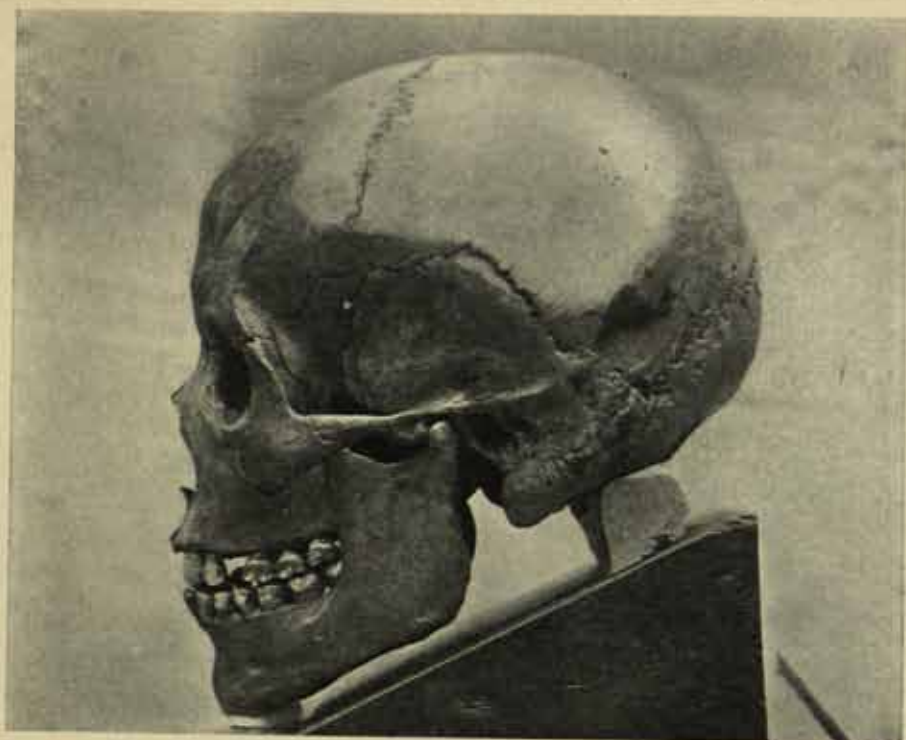


FIG. 1.



FIG. 2.



FIG. 3.

HADENDOA SKULL NO. II.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.



FIG. 2.



FIG. 3.

HADENDOA SKULL NO. III.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.



FIG. 2.



FIG. 3.

HADENDOA SKULL NO. IV.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.

BARABRA TYPES.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.



FIG. 2.

BARABRA TYPES.



FIG. 3.

PART OF WALL PAINTING FROM TOMB OF HUY.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.

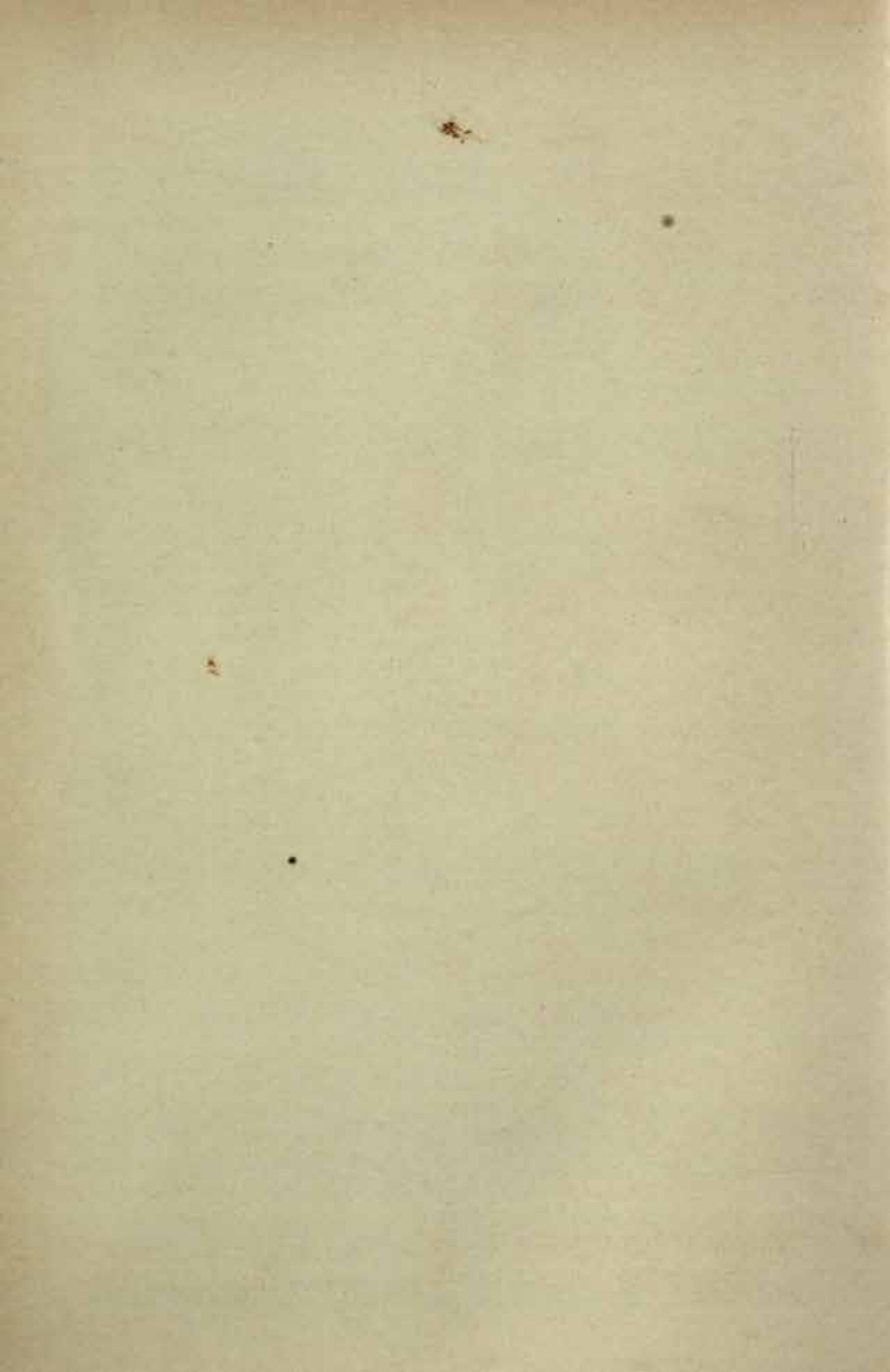




FIG. 1.—TYPE 5.



FIG. 2.—TYPE 5.



FIG. 3.—TYPE 7.



FIG. 4.—TYPE 7.



FIG. 5.—KABABISH SHEYKH ALI TOM.



FIG. 6.—TYPE 8.



FIG. 7.—TYPE 1.



FIG. 8.—KABABISH WOMAN.

KABABISH TYPES.
SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 1.—TYPE 19.



FIG. 2.—TYPE 19.



FIG. 3.—TYPE 20.



FIG. 4.—TYPE 20.



FIG. 5.—TYPE 17.
SHILLUK TYPES.



FIG. 6.—TYPE 17.

SOME ASPECTS OF THE HAMITIC PROBLEM IN THE ANGLO-EGYPTIAN SUDAN.

about 7 to 1 against so large a series of deviations as actually occur in the third group (stature).

The conclusion is that these observations might have been correctly made by random sampling from normally distributed physical characteristics, if we can allow for the two heads with large C.I., of course there are other more composite groupings from which these could conceivably have arisen, but there is no indication of the mixture of two distinct groups with widely differing averages.

PLATE XXV.

Beni Amer village.
Hadendoa encampment (Sinkatkenab).
Hadendoa temporary shelter.

PLATE XXVI.

Group of Beja, in front are three Beni Amer, behind them two Hadendoa.
Group of Hadendoa (Bedawib).

PLATE XXVII.

Beni Amer types.

PLATE XXVIII.

Hadendoa types.

PLATE XXIX.

Hadendoa types.

PLATE XXX.

Beja from twelfth dynasty tomb.
Head of Rameses II. (Turin Museum).
Head of Beni Amer showing resemblance to head of Rameses II.
Ivory head of protodynastic Egyptian from Hierakonpolis (Quibell).
Head of Beni Amer showing chin-tuft beard.

PLATE XXXI.

Hadendoa skull No. I.

PLATE XXXII.

Hadendoa skull No. II.

PLATE XXXIII.

Hadendoa skull No. III.

PLATE XXXIV.

Hadendoa skull No. IV.

PLATE XXXV.

Barabra types.¹

PLATE XXXVI.

Barabra types.
Part of wall painting from tomb of Huy (Lepsius).

PLATE XXXVII.

Kababish types.

PLATE XXXVIII.

Shilluk types.

¹ I am indebted to Dr. Wood Jones for Figs. 3 and 4, and to Mr. Blackman for Figs. 5, 6, 7 and 8.

1 SOME ARAB AND SHAWIA REMEDIES AND NOTES ON THE TREPPANNING OF THE SKULL IN ALGERIA.

BY M. W. HILTON-SIMPSON.

[WITH PLATE XXXIX.]

I.—*Arab and Shawia Remedies.*

THE following remedies were noted during a stay of more than two months at El Kantara, "The Mouth of the Sahara," and a journey of one month's duration among the Shawia Berbers of the Wad Abdi and the valley of Bouzina in the western part of the Aurès Mountains in the spring of 1913.

With the single exception of the preventive against hydrophobia all of them were described to me by Arabs or Shawia, who believed implicitly in their efficacy.

As is invariably the case among peoples who are still in a primitive state of culture the border line between medical science and magic is so ill-defined as to be almost non-existent, several of the remedies that I noted, therefore, consist merely in the wearing of charms, "some of which," as Mungo Park says of those found by him in the Sudan, "are, indeed, well calculated to inspire the patient with the hope of recovery, and divert his mind from brooding over his own danger."

I have omitted from this paper all charms that are used to ward off "illness" as a whole and have described only such as are used to prevent or combat some definite disease.

After each remedy will be found, in brackets, the word "Arab" or "Shawia." This signifies that the remedy was described to me by an Arab or Shawia as being in use among his people, but it is not intended to imply that remedies described as "Arab" are unknown to the Shawia or *vice versa*. The people of El Kantara call themselves Arabs and entertain a certain amount of ill-feeling towards their Shawia (Berber) neighbours, but the El Kantaris so frequently take their wives from among the Shawia that there is in reality a strong infusion of Berber blood at El Kantara, which is very noticeable in the pale complexions of the so-called Arabs, and it seems probable that the Shawia wives may have brought with them Folk-remedies which might be unknown among the purer Arabs inhabiting the Sahara.

MM. Hanoteau and Letourneux, in their work on *La Kabylie* (vol. i, p. 421), state that such medical knowledge as exists among the Kabyles has largely been introduced by pilgrims who, on their return from Mecca, have stayed for a time in Egypt or Tunis and there picked up a little knowledge which enabled them to practise as doctors upon their return home.

Doubtless the same thing has occurred in the Aurès and in the Sahara, so that it is almost impossible to describe any given remedy as Shawia or Arab when that remedy may have originated in any part of the Mohammedan world.

On the other hand any remedy which I describe as Shawia and which has not previously been noted from other parts of North Africa or Western Asia may well be indigenous to the Aurès.

Fever.—Although Algeria is considered a health resort for Europeans fevers are very common at certain seasons in some parts of the country, especially in the southern oases of the Algerian Sahara. The remedies which I learned for them are partly of a "magical" nature.

1. The feathers of the hoopoe (Arabic "hadhad") are put on the fire while the patient stands over it so that his body is enveloped in the smoke from the burning feathers. (Arab and Shawia.)

The hoopoe is said to migrate from the desert to the Aurès in the summer, when the Shawia endeavour to shoot it. When shot it is "dried" and kept in the house, where its presence brings luck and health and keeps off the "evil eye," so that the feathers must be held to possess some magical virtues in addition to their material usefulness in giving off ammonia while burning, for which practical reason feathers are still burnt in England in cases of faintness.

2. A tuft of wool is cut from between the horns of a *black* sheep. This is put on the fire while the patient stands in the smoke as in that of the hoopoe feathers. (Shawia.)

3. Oleander leaves are picked before sunrise during the winter fête of Ashura (on the tenth day of the first month of the Mohammedan year) and are kept tucked away in the rafters of the house. In cases of fever some of these leaves are burned, the patient standing in their smoke as in the above two "cures."

Oleander leaves certainly contain volatile oil, so that in this "cure" there is a substratum of reason which is possibly unknown to the Shawia who employ it. (Shawia.)

4. For the *affections of the liver* so frequently consequent on fever the following medicine is recommended in the Aurès.

"For liver, when the urine is yellow," take some onions, pound them in a mortar, tie them up in fine cotton material and wring out their juice. Take one coffee cup full of this juice, one coffee cup full of vinegar (white vinegar for preference, but red will serve), and one coffee cup full of olive oil. Mix these three in a bottle.

Take an egg, put it in clean water and leave it there all night. Next morning open the egg very carefully at one end and pour its contents into a cup, then fill the empty eggshell with the mixture from the bottle and drink the dose, immediately afterwards swallowing the raw egg.

This must be done every morning about half an hour before taking the cup of coffee with which most Shawia who can afford the luxury break their fast. In six or seven days a cure is effected. (Shawia.)

The Shawia are as fond of coffee as the Arabs, and the household would have to be exceptionally poor which did not contain one or two of the little china cups, of European manufacture, such as can be seen in any native café in Algeria. These

cups, which are all more or less of the same size, form a convenient measure in a country where chemists' scales and marked medicine bottles are unknown.

5. *For enlarged spleen.*—Take the spleen of a goat and lay it upon the patient's left side over his spleen. Then take a "minjel," the small sickle hook with a serrated edge in use all over Algeria, and, having made it very hot in a fire, apply it as in branding to the goat's spleen lying against the patient's side. Repeat this seven times. Then put a number of thorns of a local juniper (? Shawia "Taga," *Juniperus oxycedrus*) into the goat's spleen so that they stick up from it like pins in a pin-cushion.

Hang the goat's spleen up in the house so that the patient cannot fail to see it directly he awakes in the morning. When he sees it he must say, "It is my own spleen that grows smaller," for as the goat's spleen dries and shrinks so does that of the patient decrease in size until it resumes its normal proportions. (Shawia.)

Among the Kabyle Berbers, the near relations of the Shawia, branding or "firing" the patient's own side is or has been employed as a remedy for splenic trouble; on p. 425 of the first volume of their work on *La Kabylie*, MM. Hanoteau and Letourneux state "Contre l'hypertrophie de la rate on met encore en usage les ventouses, ou bien des scarifications sur l'hypocondre gauche avec un instrument trenchant rouge au feu."

It seems very possible that there may be a connection between this operation performed in Kabylie and the magical treatment for splenic trouble that was described to me in the Aurès.

I cannot think it probable that the Shawia formerly practised cautery of the patient's own side for these complaints and subsequently introduced the goat's spleen, thereby converting a surgical operation into a magical rite; it appears far more probable that the Kabyles at one time treated splenic troubles with the goat's spleen, as is now done in the Aurès, but having learned the value of cautery (which is largely used in North Africa for a variety of complaints) came to the conclusion that it could be successfully applied directly to the patient in these cases and so evolved a surgical operation from a form of treatment which may have survived from a time when they were in a very primitive state of culture, an epoch long before the Islamic flood swept over the Barbary States.

The treatment of enlarged spleen by cautery is also mentioned by Major Denham (*Travels in Northern and Central Africa*, vol. i, p. 157) as having been practised on a Tripolitan merchant in Fezzan.

6. *Headache* is cured by smearing the pitch extracted from cedar wood on the forehead. (Shawia.)

Cedars are very numerous in the northern part of the Aurès and the method of extracting the pitch is as follows:—

A branch of cedar wood is cut into small pieces with an adze (the usual implement of the country) and the pieces are placed in an earthen bowl which is then turned over on to an earthen plate, to which it is joined with mud in such a way that the pitch can only exude through one channel left in the mud for the purpose.

The little kiln thus made is covered with brushwood which is set on fire. This process exactly resembles the method of baking Shawia pottery. The fire is kept burning for a long time and when the cedar becomes sufficiently hot the pitch exudes through the channel and runs into a bowl placed ready to receive it. Special pottery vessels are made with a channel formed in them to allow the pitch to run out, but I was unable to see one, and the method described above is, I believe, the usual one employed for extracting cedar pitch.

The pitch is very largely used all over Algeria for dressing sore backs on beasts of burden and is also applied to the interior of goatskin bottles. Lieutenant-Colonel Villot, in his third edition of the *Mœurs des Indigènes de l'Algérie* (p. 363), describes a similar method of extracting the pitch, and states that, in addition to that of the cedar, the pitch of the juniper and the pine is obtained in the same way.

7. For *cold in the head* accompanied by a *cough*, take an ordinary round flat loaf of native bread, quite newly made so that it is pliable; pound some garlic in a mortar and place it in the middle of the loaf; fold the loaf over on the garlic so that it somewhat resembles the English pastry known as "jam puff," then "cook" it well and eat it while it is very hot without drinking anything. Go to bed and put on a lot of warm coverings. Next day the cold will be cured. (Shawia.)

8. Inhalation is also practised among the Shawia as a cure for *colds in the head*. Water is poured upon one of the three stones that serve to support cooking pots over the fire while the stone is very hot, the steam that arises is inhaled through the narrow end of one of the plaited halfa grass funnels made for filling goatskin bottles, the wide end being held over the stone and the patient's head enveloped in a burnous to prevent the escape of the steam. (Shawia.)

9. The Arabs around El Kantara recommend the swallowing of raw eggs upon which pepper has been sprinkled as a remedy for colds in the head and they chew cloves in order to prevent coughing. This latter is certainly efficacious. I was first told of it by my shikari when out stalking gazelle and, having a cough at the time, I tried it with great success, the counter-irritation produced by the cloves certainly checking an almost irresistible inclination to cough which would sometimes come upon me when trying to approach game. The Arab shikaris of El Kantara usually carry cloves with them when hunting. (Arab.)

10. *Sore throat*: chew the bark of the walnut tree and swallow the juice that exudes from it. (Shawia.)

11. *Sore throat*. The Shawia put a little of a powdered herb called Noonkha into hot milk and drink it: this is said to be a very rapid remedy for sore throat and also an aid to urination. (Shawia.)

I collected some of this powder and submitted it to Kew, where I was informed that it "consists chiefly of the stem, fruits, etc., of one of the Umbelliferae: *Ptychotis atlantica*, Cosson." In Monsieur Foureau's catalogue of Arab and Berber names of plants, etc., growing in Algeria I find Nabtha; Nenkha; Nounkha; (Arabic). Ourka (Berber). . . . *Ptychotis verticillata*. Ombellifères.

12. The eating of dried meat, which under the name of *Khalia* is largely used all over North Africa, is considered good for *colds, coughs, and pulmonary troubles*. (Shawia.)

13. *Sore throat*.—A chameleon is killed and its flesh dried and powdered. The powder is mixed with water or milk which is used as a gargle, the throat being rubbed with the hand meanwhile. (Shawia.)

14. *Sore throat*.—Hang the head of a chameleon around the neck on a string to cure sore throats and to keep away illnesses in general from a child. (Shawia.)

15. Chameleons dried, powdered and cooked in eggs are eaten for *stomach troubles* by the Shawia.

The chameleon is largely used in North Africa both for medicinal purposes and as a charm. Mr. Budgett Meakin in his work on *Life in Morocco* tells us that "Privet or mallow leaves, fresh honey and chameleons split open alive are considered good for wounds and sores, while the fumes from the burning of the dried body of this animal are often inhaled."

Among the Kabyles of Algeria, according to MM. Hanoteau and Letourneux, a curious custom obtains in accordance with which a man before marriage sends to his bride-elect samples of all the wares sold by itinerant pedlars, one of the items in the list given of these being, "Débris de caméléon (tata) antidote contre les maléfices."

16. *Whooping cough* is treated (1) by drinking hot ass's milk or (2) by cutting the throat of a turtle-dove held in such a position that its warm blood flows into the patient's mouth and down his throat. (Shawia.)

This treatment of a complaint by means of the blood flowing from a creature whose throat has been cut finds a parallel among the Tuareg of the Sahara, also a people of Berber origin who profess the Mohammedan faith. Captain Bissuel on p. 79 of his book on the *Touareg de l'Ouest* notes that it is employed by them in cases of fever: "Le malade fait égorger une chèvre, et se place de façon à recevoir, sur la tête, le sang qui retombe sur ses épaules et se répand en suite sur tout le corps."

17. For *hæmorrhoids* (Arabic "mard el bowesser") take the leaves of the *Teselghā* (Shawia for *Globularia Alypum*, L.) and the leaves of the *Taga* (Shawia for *Juniperus oxycedrus*, L.), burn them and mix their ashes with oil or water and apply to the anus. This causes considerable pain, but it must be repeated morning and evening, after washing the anus with tepid water, for five or six days, when the patient will be cured. Unless this remedy is applied in the early stages of the complaint it is useless. (Shawia.)

18. Another treatment for *hæmorrhoids* is to eat a coffee-spoon full of honey, with which powdered garlic has been mixed, early in the morning about half-an-hour before breaking the fast; the mixture must also be applied to the anus. This treatment is repeated until a cure is effected, which usually means seven or eight days. (Shawia.)

19. For *pain in the stomach* I learned only a magical remedy. My informant's

son was vexed with pain in the left side of the abdomen. An Arab wrote a text from the Koran upon a piece of dried skin taken from a sheep that had been killed for the "Sheep Feast," and bound it over the boy's stomach so that the text lay over the seat of the pain. This put an end to the trouble. (Arab.)

Of course this treatment is the result of a blind faith in the Mohammedan religion on the part of a naturally superstitious people, but, as an instance of the readiness with which natives of Algeria will endow objects which have no connection with their religion with magical powers of healing, I may mention that I have heard of splints applied by a European to a broken limb being kept and subsequently bound to parts of the body which were affected by some complaint in the firm conviction that they possessed healing properties in themselves which would prove useful in the case of any illness from which their owner might suffer.



FIG. 1.



FIG. 2.

20. As elsewhere in North Africa the foot of a porcupine hung over the breast is considered a preventive against and a cure for *sore breasts in mothers* in Algeria. It is employed as soon as the breast begins to feel sore. The Arabs and Shawia share this belief, but I have been unable up to the present to find any reason for it. One Shawi told me that it is because the porcupine is "the most healthy of beasts."

The foot employed should be the right fore foot of the animal, but the left foot is also used. The one I purchased from a Bedawi near El Kantara (Fig. 2, No. 13) is a left foot and that perhaps accounts for the small price I was asked for it. The

natives of the Aurès will pay as much as ten francs for a right foot without any silver mounting, which is only put on for ornament and to make the foot more easily attachable to a cord around the neck. The charm is bought by the husband and appears to belong to him, for he not infrequently lends it to his friends for the use of their wives.

The feet are bought in such large centres as Biskra or Batna.

21. *Generally "out of sorts."*—Cut the throat of a hedgehog, put the carcase into an earthen pot and put fire over the pot, as in the baking of pottery and the extraction of pitch from cedar wood. Leave the carcase to bake until it is burnt "like charcoal." Powder the burnt carcase, mix it with honey and eat a soup-spoonful of the mixture every morning before breakfast. (Shawia.)

22. *"Bad eyes."*—Take the gall bladder of a hedgehog which has been dried in the sun and make a small tear in the skin of it. Then touch the eye-ball with the interior of the gall bladder thus exposed by the tear in the skin. (Shawia.)

The hedgehog is known in Europe to possess a high immunity to a great many poisons. It seems possible that this immunity may be known to the Shawia, who have, perhaps, observed the animal after having been bitten by a snake, and this may be the reason for their supposition that the burnt body of the hedgehog can be useful in medicine.

Hedgehogs are systematically hunted near Bouzina in the Aurès and are sold for medicinal purposes. The hunter goes out at dusk with a dog which scents the hedgehogs and causes them to curl up, when they are easily captured.

23. *Itch* (a very common complaint on the heads of children).—Oleander leaves burnt and powdered are mixed with gunpowder, sulphur, and fresh honey; care being taken that no salt finds its way into the mixture. This ointment is applied to the parts affected. (Shawia.)

Volatile oils and sulphur are used, I understand, in England as a cure for parasitic itch and such oils can be obtained from oleander leaves.

I believe that pitch is used in Algeria for itch, and I know it to be applied to mange in camels.

24. A skin disease resembling *eczema* (not regarded by the natives as syphilitic) is treated by wiping the teeth with the finger early in the morning and applying the deposit from the teeth to the spots. (Arab.)

25. *Boils* are induced to break and the pus is drawn from them by means of poultices of fresh camel dung warmed over the fire. (Arab.)

Butter mixed with soot is also used for boils. (Arab.)

26. *Toothache* is cured by inserting a portion of a lump of Hantit into the hollow of the tooth. (Arab and Shawia.)

The Hantit collected consists in lumps of a resinous-looking substance which contains asafœtida. In Mr. Doughty's *Wanderings in Arabia*, I find mentioned "haltita, or gum asafœtida, a drug which the Arabs have in sovereign estimation."

The dental forceps illustrated (Fig. 2, No. 14) were obtained among nomad Arabs.

27. *Sprained ankle*.—Poultices of mule dung and salt are applied to the ankle. (Arab.)

This remedy was noted at El Kantara where the mule is the ordinary beast of burden, and its dung is therefore easily obtainable. I do not know that any special virtue is believed to belong to the dung of the mule, and I should say that it is only used because it is always at hand.

28. *Bruises and strains*.—Wrap a piece of camel's fat in cotton material, warm it over a fire and then gently rub the part affected with the cotton containing the fat. I have tried this myself with beneficial results to my knee when bruised and twisted by a fall. (Shawia.)

It would appear that the fat of the camel is considered by the Shawia to be superior to all other fat for this purpose, for the remedy was recommended to me in the higher parts of the Aurès where camels are not to be found, although the fat of goats, sheep, and cattle could easily be procured.

The use of camel's fat must obviously have been learned from the Arabs of the desert.

29. *Water on the knee*.—Make some oil very hot; wrap a little salt in a rag, dip it in the hot oil and gently "dab" the swollen knee with it. The oil used is presumably that of the olive. Massage is also recommended for water on the knee. (Arab.)

Both these forms of treatment were recommended to me when suffering from water on the knee at El Kantara, but I noted a far more drastic remedy some years ago in the Sahara. One of my camel men (a native of Morocco) had "fired" his knee with a red-hot knife when fluid had formed on it during a long journey, and this treatment had been successful.

30. For cuts and to check bleeding in a wound the ashes of cotton or woollen rag or of paper are applied to the injury. (Arab and Shawia.)

Among the nomad Arabs I collected a paste known as "bořhum" which is used to induce cuts to heal. This paste has been examined at Kew and found to consist of a large amount of glucose, some finely powdered inorganic substance, and a few minute fragments of plant tissue. Probably honey is one of its constituents.

31. To induce hair to grow over old sores (*e.g.*, sore backs in mules) a green lizard (known in Shawia as "burriõn") is killed and burnt to ashes, the ashes mixed with oil are applied to the bald patch. The mixture must not be touched with the hand for hair will grow on any part of the body touched by it. (Shawia.)

32. "*Cupping*" is performed by the barber at Biskra with the aid of the cup (Fig. 2, No. 15). Two rows of four cuts each are made in the back of the patient's neck and the open (wider) end of the cup placed over them, the air being drawn from the cup by sucking the spout in order to induce the blood to flow. This method of cupping is mentioned by Mr. Budgett Meakin as being employed in Morocco, and there is a similar cup to the one illustrated in the Pitt Rivers Museum which comes from Morocco. Cups of this pattern are also used in Arabia.

33. To ensure conception a whole stem of garlic is wrapped in cotton material and inserted in the vagina, where it remains all night. At dawn it is removed, after which coition takes place. (Shawia.)

34. When the vagina is too large a piece of wool, as dirty as possible, is cut from a sheep and placed in a pot of water to which some alum and a little salt has been added. The woman bathes with this for seven days, at the end of which time the vagina should be as small as that of "a girl of fourteen years of age." (Shawia.)

Alum and water applied by means of a piece of dirty wool is said to be excellent for washing the vagina, whence it removes all impurities and discharge. It is curious that my informant insisted upon the necessity for *dirty* wool for the above purposes. (Shawia.)

35. To obtain sexual virility a man will eat a coffee cup full of honey, monkey nuts, and walnuts every morning and evening. (Shawia.) This amounts, of course, to "feeding-up."

36. To prevent *hydrophobia* the person bitten will take the dead body of the mad dog, and, having slit it open, will insert his feet in its stomach and bind the carcase to his legs, leaving it in this position all night, after which he is said to be free from any risk of infection. (Arab.) This quaint example of sympathetic magic was related to me by a European who has lived for many years in Algeria and speaks Arabic most fluently.

Although they do not, perhaps, come strictly under the heading of "Medical Notes," I may here describe two love philtres and a charm to produce madness, which were told to me by a Shawi in the Aurès.

1. *Love philtre*.—When a donkey foal of either sex is born there is a small lump of "meat" (*i.e.*, after-birth) upon its forehead. This lump, which is easily removable without any detriment to the foal, is taken away as soon as the foal's head appears by whoever is lucky enough to be at hand to procure it. It is then salted, dried in the sun, and kept to be sold in small pieces at a high price to those who require a love philtre. It is powdered and secretly put into the food of the person upon whom it is intended to act. The substance is known in the Shawia dialect as "Khorej." It is much sought after by young people of both sexes and by wives who wish to retain the affections of their husbands.

A young man will pay an old woman to invite the lady of his heart to a meal and administer the philtre in her food; women will bribe the landlord of a café to give it to one of his customers in his coffee or tea.

The man or woman on whose behalf the charm is to be used must rub the Khorej round his (or her) heart seven times—counting aloud—in order to ensure that it will work for him (or her) only.

My informant, having given me the above details, added later that a little semen of the user and the summit of a cone of sugar could be advantageously added to the powdered Khorej. The cone of sugar, no doubt, is used on account of the resemblance, slight though it be, which it bears to the male organ. (Shawia.)

While we were staying with a well-known marabout in the Aurès a donkey foal was born in the holy man's stables. One of his retainers secured the Khorej, which is now in the Pitt Rivers Museum, but he was obliged to maintain the strictest secrecy as to what he had done, for all marabouts disapprove most strongly of the use of these philtres, which they consider (probably with reason) to be the cause of a good deal of domestic trouble. The Khorej is, however, very well known and appears to be frequently used among the Shawia.

2. *Love philtre*.—A woman who wishes to retain her husband's affections goes by night to a fresh tomb, cuts off the right forearm of the corpse (of either sex) and stirs her husband's kus-kus with the dead hand in order that his heart may be dead to all other women. (Shawia.) I have described this philtre exactly as I noted it from my Shawi informant, and I was able to learn nothing further about it except that it, like the Khorej, is forbidden by the marabouts and by religion. It seems to bear some resemblance to a practice which, I am told, is common in Egypt. In that country a man will secure the hand of a corpse and cause his wife to step across it seven times in order to ensure conception.

3. Hyena's brains are secretly mixed with a person's food in order to send him mad. From this madness there is no recovery. (Shawia.) This custom, which Mr. Budgett Meakin mentions as existing in Morocco, may possibly have its origin in the similarity between the "laugh" of a hyena and that of a maniac.

II.—*Trepanning of the Skull among the Nomad Arabs of Algeria.*

When I went to Algeria this year (1913) I determined to try to obtain for the Pitt Rivers Museum specimens of the instruments with which the Shawia have for a long time past been accustomed to perform the operation of the trepan. Drs. Malbot and Verneau have described the operation in *L'Anthropologie*, VIII, 1897, p. 174, as being performed by Shawia of the Djebel Cherchar in the eastern portion of the Aurès Mountains, and they state that surgeons who have learnt their art in this district are to be found in practice over a great part of the Aurès and in the desert as far as the Wad Rhir and the Wad Souf to the south and south-east of Biskra.

I expected, therefore, to obtain the instruments I wanted (if indeed I was able to obtain them at all) from the hands of a *Berber* surgeon.

On arriving in Algeria I learned from a French doctor in the Government service that trepanning is practised in the south-western portion of the Aurès, in villages within easy reach of El Kantara, where I was staying, but I was told that the natives were extremely reticent about the doings of their surgeons, and that it was improbable that I should succeed in meeting one of them or in seeing his instruments.

I was agreeably surprised, therefore, when I found that I had made friends with two surgeons in the second village I visited, and that they were not only

willing to discuss their operations, but were quite ready to part with such of their instruments as they could spare.

As I believe these instruments are extremely rare in collections I give a careful description of each of them in the course of this paper, as well as a photograph of those now in the Pitt Rivers Museum.

I was astonished to find that the surgeons I met were *Arabs*. They belong to a large tribe of nomads who wander with their numerous flocks of sheep and goats over a wide area of country to the south of El Kantara, and who own two or three villages in the oases whence they obtain their supply of dates.

This tribe is said by Colonel de Lartigue, in his work on *L'Aurès*, to have migrated from Morocco about the year 1500 of our era, but the people stoutly affirm that they are Arabs, and with the exception of a few of the poorer classes, who remain in the villages as guardians of the date plantations, they live the same life in their tents of goats' hair as the Bedawin Arabs farther south in the Sahara.

When I mentioned to my surgeon friends that I had imagined the operation of the trepan to be performed exclusively by the Shawia they denied that this was the case, and told me that it was known "all over the desert."

Of course it may be that the Shawia of the Djebel Cherchar originally disseminated surgical knowledge throughout the Sahara, and, as Drs. Malbot and Verneau suggest, may have practised the operation of the trepan from time immemorial in their Aurès home, but, on the other hand, it must be remembered that the Arabs overran the Djebel Cherchar on more than one occasion, and, settling down in the district, mingled with the original Berber inhabitants (Colonel de Lartigue, *L'Aurès*).

It seems possible, therefore, that the Arabs introduced their surgery among the Berbers, but it is very difficult to determine finally to what race trepanning in Algeria owes its origin from the limited evidence at present available, for there have been so many conquerors of Barbary who have left their mark upon the country.

According to Colonel de Lartigue descendants of Roman colonists were found by the Arabs in the Djebel Cherchar in the eleventh century; many of the "educated" Shawia hold the belief that their race is descended from the Romans; and Drs. Malbot and Verneau describe as being practised in the Aurès a method of trepanning by means of adjacent perforations with the drill which was not mentioned to me by the Arabs but which closely resembles a method referred to by Percivall Pott in his *Chirurgical Works* (vol. i, p. 157 *et seq.*), as being employed by the "ancients" and in connection with which he quotes from Oribasius, a Greek who lived, I think, about A.D. 400.

Upon the scanty evidence we possess, therefore, it seems almost impossible to form an opinion as to the origin of trepanning in North Africa. That information as to Shawia and Arab surgery and medicine is not easily obtainable is due to the suspicion with which the native practitioners regard the French doctors, who would, of course, be interested in studying their methods.

When once the natives have become convinced of the superiority of European medicine and surgery the local doctors' livelihood will be gone; it is not to be wondered at, therefore, that the native practitioners do not love the Government doctors and do their best to prevent their patients from putting themselves in their hands. With this object they encourage the belief, so commonly held in Algeria, that if a native goes to a European hospital with an injured limb that limb will probably be amputated. To the Arab and Shawia death is preferable to the loss of a limb.

Cases are not wanting in which a native has been cured by an Arab surgeon after the European doctor has pronounced the amputation of the limb to be necessary. One of these came under my notice in which the operation was performed by one of the Arabs from whom I purchased instruments and who enjoys a very wide reputation for his skill in removing pieces of damaged bone from a limb as well as for his success in trepanning.

It appears that the sheykh of his village received a gunshot wound at close quarters in the left upper arm while travelling in the train. He was taken to the hospital, where he was told that his arm must be amputated at the shoulder. With an Arab's horror of amputation he decided to return home and be treated by the native doctor rather than remain in hospital and lose his arm. The native doctor removed several pieces of damaged bone from the arm and the sheykh recovered. I saw the arm myself, and although the scar was very large and deep the sheykh informed me that he suffered no inconvenience at all as a result of the wound and operation.

The same surgeon had successfully removed a large piece of bone from the tibia of a woman's leg (which piece of bone I collected, see Fig. 1, No. 11) and also some fragments from the forearm of a man who showed me the scars.

Both these two operations were necessitated by gunshot wounds.

Cases like the above, especially that of the sheykh, do much to keep alive surgery among the Arabs even in districts whence a European doctor can be reached without a very long journey.

Before relating the information given to me on the subject of trepanning I will describe in detail the instruments I collected, which are illustrated in Plate XXXIX.

These are nine in number and all bear unmistakable signs of having been used. Most of them appear to have been sterilized in fire, for there are marks of burning upon their wooden handles which, from their appearance, could scarcely have been made when the blades were hafted.

1. *Scalper* (Arabic name "*matabaa*").—A cylinder of iron about $\frac{1}{8}$ inch in depth and $1\frac{1}{2}$ inches in diameter, made of a strip of iron with one sharp edge, bent round until the ends touch without being joined. Where the ends meet one end is joined by fusion on its blunt edge to a round bar of iron about 13 inches long, so that the cylinder is at right angles to the bar. The other end of the bar passes through a round wooden handle, 4 inches in length, and is bent round at right

angles to prevent this handle from slipping off. The instrument roughly resembles a large "wad-punch."

2. *Retractor* (Arabic name "shefira").—An iron blade projecting about $2\frac{1}{2}$ inches from a round wooden handle $3\frac{1}{2}$ inches in length. The blade where it joins the handle is rectangular in section and about $\frac{1}{2}$ inch wide, but it gradually becomes flatter and wider until at the distal end it is about $\frac{3}{8}$ inch wide, the end being slightly rounded at the corners and presenting a fairly sharp edge. This end is bent over at right angles to the rest of the blade to form a hook. The whole blade slopes slightly backwards from the handle.

3. *Retractor* (Arabic name "shefira").—An iron blade projecting about $1\frac{1}{2}$ inches from a round wooden handle $1\frac{1}{2}$ inches long. For $1\frac{1}{2}$ inches of its length the blade is rectangular in section and about $\frac{1}{2}$ inch wide, but the distal end is flat, widening abruptly to a width of $\frac{3}{8}$ inch, and is bent round at right angles forming a hook, the fairly sharp edge of which is slightly rounded at the corners.

4. *Hook or retractor* (Arabic name "mongesh").—An iron blade about $1\frac{1}{2}$ inches long inserted in a lathe-turned wooden handle presumably of European origin. Where it joins the handle the blade is rectangular in section and about $\frac{1}{2}$ inch wide, but it narrows towards the distal end which is little more than $\frac{1}{16}$ inch in width. The distal end is bent sharply round to form a small hook.

5. *Drill*, also used as an *elevator* (Arabic name "hefwerl").—An iron blade about $2\frac{1}{2}$ inches long projecting from a round wooden handle $3\frac{1}{2}$ inches in length. Where it joins the handle the blade is $\frac{1}{2}$ inch wide and it gradually increases to a width of $\frac{3}{8}$ inch near the distal end. It narrows abruptly (leaving a "shoulder" on each side) at the distal end so that the last $\frac{3}{16}$ inch of the blade is only $\frac{1}{8}$ inch wide. This end is rounded and has a cutting edge. The "shoulders" on the blade would serve to prevent too deep a hole being made through the skull when the instrument is used as a drill.

6. *Saw* (Arabic name "monshar" or "menshar").—An iron blade projecting $3\frac{1}{8}$ inches from a round wooden handle $2\frac{1}{2}$ inches long. The blade is rectangular in section where it joins the handle and is about $\frac{1}{2}$ inch wide. It curves downwards almost at right angles 2 inches from the handle and then curves outwards again at the distal end where the blade is flat with a serrated lower edge containing eleven teeth. The serrated edge forms a segment of a circle, the teeth being upon the convex edge.

7. *Saw* (Arabic name "monshar" or "menshar").—Very similar to No. 6. An iron blade $4\frac{1}{2}$ inches long inserted in a wooden handle about $2\frac{1}{2}$ inches long. The curves in this saw are not so sharp as in No. 6; there are thirteen teeth on its convex edge. Neither of these two saws is sharp.

8. *Saw* (I do not know any special Arabic name for this form of saw so I presume it is called "monshar" or "menshar").—An iron blade $2\frac{1}{2}$ inches in length with a round wooden handle $3\frac{1}{2}$ inches long. The blade for $1\frac{1}{2}$ inches from the handle is rectangular in section and about $\frac{1}{2}$ inch wide; the last $\frac{1}{2}$ inch of the blade is a flat rectangular surface with three serrated edges. The teeth are fine and sharp.

9. *Elevator* (Arabic name "mhez").—A flat iron blade about $\frac{3}{8}$ inch wide protruding about $1\frac{1}{2}$ inches from a round wooden handle $2\frac{1}{2}$ inches long. The distal end curves very slightly indeed and is fairly sharp. Its corners are not rounded but one of them has been broken off.

The above instruments I was told by both my surgeon friends are all that are necessary for trepanning, but I ought, perhaps, to add to the list a tenth implement collected at the same time. The real function of this tool (a sharp pointed iron blade in a wooden handle, Plate XXXIX, No. 10) is to smooth down the transverse woollen threads on the loom when weaving a burnous, but its point would render it useful for piercing the skull in lieu of the "heŕweŕl" or, used as a probe, for testing the depth of the holes drilled or cuts made with the saw. My reason for including it in the list of instruments is that after I had purchased some trepanning instruments from the less celebrated of the two surgeons he sent me this tool as a present. I had not discussed anything but trepanning with him and I had attempted to purchase no specimens other than surgical instruments in the village, I cannot understand, therefore, why the surgeon should have given me this tool unless he used it in his profession. From its appearance I am sure it has actually been used in weaving, but it seems quite possible that it has served for surgical purposes as well, although I have no direct evidence of this.

The method of trepanning a head was described to me as follows:—

The first thing to be done is to remove a portion of the scalp in order to expose the place to be trepanned. This is effected by making the "punchlike" instrument "matabaa" (1) white hot in a fire and placing it firmly, like a branding iron, on the head, a flicking movement of the instrument then removes the piece of scalp thus burnt round. The great heat, as well as sterilizing the "matabaa," also prevents excessive bleeding from the scalp. The retractors, "shefira" (2 and 3), are then used to draw away the scalp around the place to be trepanned in order to give room for the use of the saw. I presume that the hook "mongesh" (4) is also used for this purpose. A hole is then drilled in the skull by spinning the drill, "heŕweŕl" (5), between the palms of the hands. This, I am told, is to let out any pus and blood that may be under the skull, but I imagine the hole thus made would also be useful as a starting place for the saw.

The saw is then applied to the "good" bone just clear of the injured part. Only a very small amount is sawn through, after which the elevator (9) or the hook (4) is inserted in the incision and, if possible, the "bad" bone slightly raised in order to let out pus and blood.

Great care is taken that the dura mater be not pierced, for my informant told me that the patient must die if this is done.

Only the small incision with the saw described above is made on the first day, but next day and on each succeeding day the process is repeated until the whole of the "bad" bone has been removed.

So little is sawn through each day that it takes from fifteen to twenty days to remove a portion of the skull as large as a penny piece.

The part sawn away is lifted from the head with the elevator or the hook.

When the "bad" bone has at last been removed, no artificial bone or plate is placed over the cavity, but the skin is induced to re-form over the wound by the daily application of fresh dressings of a mixture of honey and butter, and the stem and leaves of a herb powdered as fine as snuff.

The herb, which I collected in its powdered form, grows locally upon the hills and is a species of *Labiatae*.

The daily dressing is continued sometimes for as long as one month, at the end of which time the patient is cured.

No form of anæsthetic is used. I could find no evidence of any attempt to sterilize the saw, the retractors, or the elevator (unless we accept the burns on the handles of the instruments as an indication that they have been purposely sterilized in fire) and the rags used as bandages are of the dirtiest description. The surgeon does not wash his hands as a rule either before or after dressing a wound.

The more celebrated of the two surgeons I met told me that he sometimes trepans as many as five or more heads in one year, the nature of the cases being usually heads "broken" by blows from sticks or stones. He also told me that operations for the removal of damaged bone from the arm or leg are performed in the same manner and with the same instruments as trepanning. This surgeon presented me with some fragments of skull removed from the head of a man now living (Fig. 1, No. 12).

Upon one of these fragments, marked with a \times in the illustration, is an incision apparently made by twisting some instrument pressed hard against the skull after the manner already described of drilling a hole with the "herwefl." The fragment of skull is not perforated, however, so that the incision cannot have been made to let out pus and blood, but would appear from its position to have been used as a starting place for the saw.

This incision must have been made with a trident drill such as Drs. Malbot and Verneau describe as being in use among the Shawia. Of course the two surgeons only sold to me such instruments as they could spare and it seems probable that they possess the drill in several different forms.

I was not fortunate enough to witness the actual trepanning of a head, but I did see a case in which the operation had been commenced.

The patient was a boy about fourteen years old who had been knocked down by a train some twenty miles away fifteen days before I saw him. His right leg had been broken and he had received terrible injuries to the left side of his head.

The leg had been set and was in splints, but the limb was so much wrapped up in old clothes, etc., that I could not ask to see it.

The hut in which the boy lay was very dark so that I was not able to see the wound very clearly when the bandages were removed from his head, but I could



SOME ARAB AND SHAWIA REMEDIES.

make out that a portion of the scalp had been neatly taken away and a clean edge of bone showed where some pieces of the skull had already been removed.

The boy was able to eat, talk a little, and pull himself up to a sitting position by means of a cord suspended from the roof.

The surgeon entertained no doubt whatever that his patient would ultimately recover.

The fact that the boy had lived for over a fortnight with the terrible injuries he had received, rendered more awful by a twenty-mile journey over rough country (presumably on the back of a mule) and by the daily treatment he was undergoing without an anæsthetic, clearly proves that a life of privation and hardship makes the nomads hard.

The surgeon took me to see this patient in the hope that I might be able to supply him with some drug to check the bleeding when the operation was resumed. This may seem to indicate that the Arabs have nothing of this nature themselves other than the ashes of rags or paper, but I cannot venture an opinion on this subject until I have had a further opportunity of studying their surgery.

The instruments I collected differ slightly from those described by Drs. Malbot and Verneau in *L'Anthropologie*.

The most usual form of drill employed by the Shawia of the Djebel Cherchar is, these authors state, in the form of a small trident, the centre prong of which is longer than the other two. Such an instrument, which is figured in *L'Anthropologie*, must have produced the hole in the piece of skull (Fig. 1, No. 12) to which I have referred above, and must therefore, be known to the Arabs too. This Shawia drill appears to be somewhat superior to that which I collected, for its handle is divided into two parts, the blade and the lower portion of the handle being loosely socketed in the upper part so that the drill can be easily caused to rotate by spinning the lower part of the handle between the palms while the instrument is held against the skull by pressure of the operator's forehead or chin on the upper portion of the handle. The drill collected by me has a simple wooden handle.

On the other hand the saws I obtained among the Arabs are not quite so primitive as those figured in *L'Anthropologie*, although their principle is the same.

Drs. Malbot and Verneau state that sometimes the use of the scalping knife, which they say is usually employed, is replaced by destruction of the scalp by means of a red hot iron, but they make no mention of a special instrument used for this purpose such as the "matabaa" (1).

The French authors declare that the native surgeons are exceedingly successful in trepanning, and they quote an instance of a woman undergoing the operation in order to manufacture evidence for divorce proceedings against her husband.

My Arab friend told me when I left him that I must be careful when following the instructions he had given me as the operation was "a little bit dangerous," but he certainly did not consider it a critical one.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1913.

January 20th, 1913.

Annual General Meeting. (See p. 1.)

February 4th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

Mr. J. EDGE-PARTINGTON presented to the Institute a weapon specially chosen from his collection for the purpose of a Presidential mace. The PRESIDENT accepted the gift in suitable terms.

Dr. W. L. H. DUCKWORTH read a paper on "Cave Exploration at Gibraltar in September, 1912," illustrated by lantern slides and specimens.

The paper was discussed by Mr. HAZZLEDINE WARREN and Mr. J. P. YOUNG.

The thanks of the meeting were returned to the lecturer for his interesting paper.

February 18th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election was announced of Mr. Guy Brunton, Mr. J. E. H. Roberts, F.R.C.S., Mr. George E. Gask, F.R.C.S., and Mr. C. L. Sabine, as Ordinary Fellows of the Institute.

The Rev. F. SMITH, M.A., then read a paper on "Some Aspects of Palæolithic Relics in North Britain and Ireland." The paper was illustrated by a series of stone implements collected by the author and contrasted with Palæolithic implements from other areas, and by lantern slides.

March 4th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election as Ordinary Fellows of the Institute of Dr. E. A. Hooton and Captain Coltart was announced.

Mr. HAZZLEDINE WARREN exhibited a primitive fishing line still employed by the fisher-folk on the River Crouch, Essex.

Messrs. HAROLD PEAKE and E. A. HOOTON then read their joint paper on a "Saxon Graveyard at East Shefford, Berks." The paper was illustrated by a collection of grave-furniture as well as by lantern slides.

The paper was discussed by Mr. REGINALD SMITH, Mr. F. G. PARSONS, Mr. LEEDS, Dr. BROWN and Dr. DERRY. Mr. PEAKE and Dr. HOOTON replied.

April 8th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election was announced of Mr. James Berry, M.S., and Mr. Miller Christy, F.L.S.

The PRESIDENT then vacated the chair, which was taken by Mr. A. L. LEWIS.

Mr. W. H. COOK and the President, Dr. A. KEITH, then read their joint paper on the "Discovery of a Human Skeleton in a Brick-earth Deposit at Halling, Kent, with a Description of the Human Remains." The paper was illustrated by lantern slides, diagrams, and by the exhibition of the implements and human remains, which were then discovered, and of "River Bed" skulls from other places in England.

The paper was discussed by Mr. BENNETT, Mr. HAZZLEDINE WARREN, Mr. KENNARD, Professor THANE, Miss BRETON and the CHAIRMAN.

Mr. COOK replied, and a hearty vote of thanks was accorded to him for his exertions and zeal.

April 22nd, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election was announced of Mr. Arthur Burrows, Mr. Dugald Campbell, Rao Bahadur Govindnar K. Desai, Mr. Ernest G. Fenton, Mr. T. R. H. Garrett, Mr. C. W. Haywood, Mr. W. McLean, M.B., Mr. V. Stefánsson, Dr. K. Stolyhwo, Mr. Allan Upward, and Mr. H. G. Wiltshire.

Mr. T. A. JOYCE, Vice-President, then read a paper on the "Weeping God." The paper was illustrated by lantern slides and other exhibits. Miss BRETON, Mr. COOPER CLARK, Dr. HADDON, and Mr. FLEISCHMANN took part in the discussion. The cordial thanks of the meeting were accorded to Mr. Joyce on his interesting paper.

Mr. A. L. LEWIS, Officier d'Académie, then read a paper on "Prehistoric Antiquities in the Departments of Vienne and Charente, France." The paper was illustrated by lantern slides. The Rev. J. W. HAYES and Mr. E. A. PARKYN took part in the discussion. Mr. LEWIS replied and after some photographs of Stone Monuments in Coldrum, Kent, belonging to Mr. Bennett, had been exhibited, the hearty thanks of the Institute were accorded to Mr. Lewis.

May 6th, 1913.

Ordinary Meeting. Professor THANE in the chair.

The minutes of the last meeting were read and confirmed.

Exhibits of skulls were made by Mr. C. FLEISCHMANN, Mr. N. HARDY, the PRESIDENT, and Dr. DERRY.

The Rev. A. IRVING read a paper on "Some Recent Work on Quaternary Geology and Anthropology, with its bearing on Pre-Boulder-Clay Man," illustrated by lantern slides and exhibits.

The paper was discussed by Mr. REID MOIR, the PRESIDENT, Mr. REGINALD SMITH and Mr. HAYWOOD, and the Rev. A. IRVING replied.

The thanks of the meeting were returned to the lecturer for his interesting paper.

May 27th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of Mr. G. Laird Macgregor, F.C.S., and Mr. L. Williams was announced.

The PRESIDENT announced that the next Ordinary Meeting of the Institute would be held, by the courtesy of the President and Council of the Royal College of Surgeons, in the Lecture Theatre of the Royal College.

Sir E. RAY LANKESTER, K.C.B., F.R.S., then opened a discussion on the Subcrag Flints, illustrated by lantern slides and exhibits. The discussion was continued by Mr. HAZZLEDINE WARREN, Mr. REID MOIR, Mr. REGINALD SMITH, the Rev. A. IRVING, Dr. CORNER, Miss LAYARD and Mr. HAYWOOD, and Sir RAY LANKESTER replied.

The thanks of the meeting were returned to Sir Ray Lankester for opening the discussion.

June 10th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

Sir HARRY JOHNSTON, G.C.M.G., K.C.B., read a paper on "Racial and Tribal Migrations in Africa," illustrated by lantern slides. Dr. SELIGMANN, Mr. TORDAY, the PRESIDENT and Dr. SHRUBSALL took part in the discussion, and Sir HARRY JOHNSTON replied.

A hearty vote of thanks was returned to the lecturer for his most important and interesting communication.

November 4th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Members of the Institute was announced: His Grace the Duke of Abercorn, Mr. Aghor nath Adhikari, Mr. C. M. Baker, Mr. H. J. Braunholtz, Mr. Denys Bray, Mr. V. Brelsford, Mr. L. H. Dudley Buxton, Mr. A. A. Carr Saunders, Mr. Louis C. J. Clarke, Mr. A. Duke, Mr. Oswald H. Evans, Mr. H. Gibson, Mr. H. B. Grimsdale, Mr. W. D. Hambly, Mr. H. B. C. Hill, Mr. J. H. Hutton, Mr. F. W. Mann, Mr. D. V. Newhall, Mr. Louis Spence and Mr. O. F. Watkins.

Mr. PRICE HIGGINS, Mr. REGINALD SMITH and Mr. A. L. LEWIS made exhibits of flint implements.

Mr. J. REID MOIR read a paper on the "Striation of Flint Surfaces," illustrated by lantern slides. The paper was discussed by the PRESIDENT, Mr. REGINALD SMITH and Dr. PEGLER, and Mr. REID MOIR replied.

The hearty thanks of the Institute were accorded to Mr. Reid Moir.

November 18th, 1913.

Ordinary Meeting. Mr. A. L. LEWIS took the chair upon the motion of the TREASURER seconded by Mr. HAZZLEDINE WARREN.

The minutes of the last meeting were read and confirmed.

The election of Mrs. H. Julian and Mr. R. Buddle as Ordinary Members of the Institute was announced.

Mr. E. SIDNEY HARTLAND read a paper on the "Evidential Value of the Historical Traditions of the Baganda and Bushongo." The paper was discussed by Mr. TORDAY. Mr. HARTLAND replied.

A hearty vote of thanks was accorded to Mr. Hartland for his valuable contribution to the Science of Anthropology.

December 2nd, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

Dr. W. L. HILDBURGH, M.A., Ph.D., read a paper on "Japanese Minor Magic connected with the Propagation and Early Infancy of Children." The lecturer exhibited a number of charms and amulets.

The paper was discussed by Mr. GARRETT, the SECRETARY, the Rev. DUKINFELD ASTLEY and Mr. ALLAN UPWARD. Dr. HILDBURGH replied.

A hearty vote of thanks was accorded to Dr. Hildburgh for his valuable and interesting paper.

December 16th, 1913.

Ordinary Meeting. Dr. A. KEITH, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Members of the Institute was announced :

Mr. Wilfred Beaver, Miss Hannah Byrne, Captain F. J. C. Evans, Mr. Arthur Jelf, Mr. J. Campbell Maury, Dr. J. E. Nuttall, Mr. A. D. Passmore, Mr. J. R. Pocock, F.R.S., Mr. J. F. Richards, M.A., I.C.S., Dr. N. C. Rutherford and Mr. H. G. Spearing.

Miss B. FREIRE-MARRECO read a paper on the "Nomenclature of Clans in the Pueblo Area." The paper was discussed by Dr. MARETT.

Miss M. A. CZAPLICKA read a paper on "Arctic Hysteria in Northern Asia."

The paper was discussed by Sir ARTHUR EVANS, Dr. FORBES, Dr. HARRY CAMPBELL, and Mr. HAZZLEDINE WARREN.

Mr. WILFRED BEAVER read a paper on "A Rough Survey of the Tribes of Western Papua," which was illustrated by means of the Epidiascope.

The paper was discussed by the TREASURER and Mr SIDNEY RAY.

The Readers of the above papers were cordially thanked for their valuable and interesting papers.

The PRESIDENT announced that he had appointed Mr. J. Edge-Partington and Mr. G. Udny Yule as auditors of the Institute's accounts.

Native Games of Central Africa.

BY MEREDITH G. SANDERSON, *Medical Officer, Nyasaland.*

The game of Nchombwa, in many different guises, is played by the Bantu races in all parts of Africa, and the characteristic holes in the ground are to be seen in every village.

Attempts to ascertain anything from the native as to its origin have, of course, been futile, but it is probable that the game has evolved with the race. I have heard it said that a similar game is played in parts of China, and, if this be true, it would be of no little interest to compare one with the other, as this would suggest an Asiatic († Arabic) origin for the African form. In this case, however, one would expect some such game to obtain among the Arabs in the Soudan, and I am informed that this is not so.

It is interesting to compare the two games, "Chiana" and "Bau"; the former is found only among the Manyanja tribe, a slave-ridden race, and even among them it has apparently only survived for the purpose of initiating children into the more complicated games—the adult native speaks of it as "wa chabe" (useless, of no interest). Bau, on the other hand, the national game of the warlike Swaheli, is very complex, and the manner in which the native foresees moves involving intricate mental calculation, conveys a salutary lesson to the European who misprizes the intelligence of the Bantu as a race. I have dealt with this game (Bau) at some length as, apart from academic interest, I have found it by no means to be despised as a pastime.

The underlying principle of the other games is almost constant. I have therefore not attempted to describe them all, but merely to furnish the ethnologist with sufficient examples to be representative of the rest. They may, also, be of interest to the resident in Africa, and may act as a clue to the forms of the game played by the tribes in his vicinity.

BAU (SWAHELI).

This game is played in Nyasaland almost exclusively by the Yaos, and even among them it is of recent importation.

The game is played by two persons, a special board and 64 marbles or seeds being required.

The Board consists of a flat piece of wood, about 2 feet 3 inches long by 1 foot 3 inches broad and 2 inches to 2½ inches thick; on one surface are four rows of shallow round holes (nyumba), eight in each row or 32 in all. The "nyumba" are regularly placed so that from side to side there are four holes in line (*see figures*).

The fourth hole from the right in the front row of each player is in most boards made larger than the rest, often square instead of round, and is called the "village" (mji or musi).

The travelling Yao makes his board after the fashion of the other games, *i.e.* by scooping out the requisite number of holes in any flat piece of ground, pebbles taking the place of the more correct seeds (nam or makomo).

For the proper understanding of the play it is necessary to plan out the two opposing front rows into two squares of four holes, one at each end, and a rectangle of eight holes in the centre.

The two holes at each end of each front line may for convenience be termed "reverse" and the four holes in each front line between them "optional."

The object of the game is to take all the men from the opponent's front row.

Definitions.

The back rows are those nearest the player.

The front rows are the two centre ones.

Reverse holes are the last two at each end of the front rows.

Optional holes are the remaining four of the first row, lying between the reverse holes and including the "village."

Addition.—A player is said to "add" a man when, in commencing his turn, he puts one of the men in hand into a hole.

Spreading.—A player is said to "spread" when he takes up all the men from a hole in one of his own rows and puts them seriatim in other holes as far as they will go, beginning with the hole next to that from which he is moving; the latter remains empty.

Placing.—A player is said to "place" the men he takes from his opponent. One is put into each hole of his own front row, as in spreading, but beginning at one end.

Arrival.—A player is said to "arrive" at a hole when he adds to that hole the last man of those which he is either spreading or placing.

Opposition.—Is said to be taken, or to exist, when a player puts, or has, respectively, a man or men in a hole of his front row opposite to one in which his opponent has a man or men.

Rules.

I.—Each player plays in turn.

II.—Each player has, at the commencement of the game, ten men in his front row and twenty-two in hand.

III.—Of the ten men, six are in the village, and two in each of the two holes immediately to the (player's) right of the village.

There is no opposition when the men are so placed.

IV.—A man must be added at the commencement of each move, as long as any remain in hand, i.e., till all are on the board.

V.—A man can only be added to a hole already occupied by one or more.

VI.—A man must be added to a hole in opposition if there be one.

VII.—A move ends when, in spreading or placing, a player arrives at an empty hole.

He is then said to "lie" (kugona).

VIII.—A man or men belonging to the opponent can only be taken (kulya) by adding a man to a hole already in opposition or by arriving at such a hole.

IX.—In such circumstances the opponent's man or men *must* be taken and placed in accordance with Rules XII, XVI, XVIII, and XIX.

X.—If no holes be in opposition at the commencement of a move, a man must be added to any hole in the front row containing one or more, and the resulting contents spread in either direction.

Only two men may be taken and spread from the "village" under this rule, and then only if all other holes in the front row be empty.

XI.—None of the opponent's men can be taken during a move commenced by adding to a hole not in opposition.

XII.—A man or men taken from an optional hole by adding may be placed from either end at the discretion of the player.

XIII.—When no men remain in hand, the game proceeds by spreading the contents of any hole containing more than one man; if, in so spreading, the player arrives at a hole in opposition, he takes and places the opponent's man or men (as before, and continues spreading or taking till he arrives at an empty hole, when the move ends.

XIV.—No man can be taken during a move under the preceding rule unless the first spread arrives at a hole in opposition; otherwise the player continues spreading till stopped by arriving at an empty hole, but he must not take any of his opponent's men.

XV.—A move must be continued till an empty hole is arrived at.

Exception.—If in spreading or placing a player arrives at the village he has the option of discontinuing his move, provided that no men have been previously removed from the village and that it is not in opposition.

XVI.—Men taken from the opponent must be placed in the front row. If more than eight men are taken from any hole the placing is continued along the back row in the reverse direction.

XVII.—Similarly, spreading is continued from one row to another by proceeding along the new row in an opposite direction.

XVIII.—A man or men taken from a reverse hole must be placed from the end hole of the same reverse.

XIX.—The direction of moves in the front row—from left to right or from right to left—can only be altered by the preceding rule.

So that a man or men taken from an optional hole by spreading or placing from right to left and so arriving at a hole in opposition, must be placed from the right-hand end, and *vice versa*.

XX.—A player loses if, there being no men in hand, he has only single men in the holes.

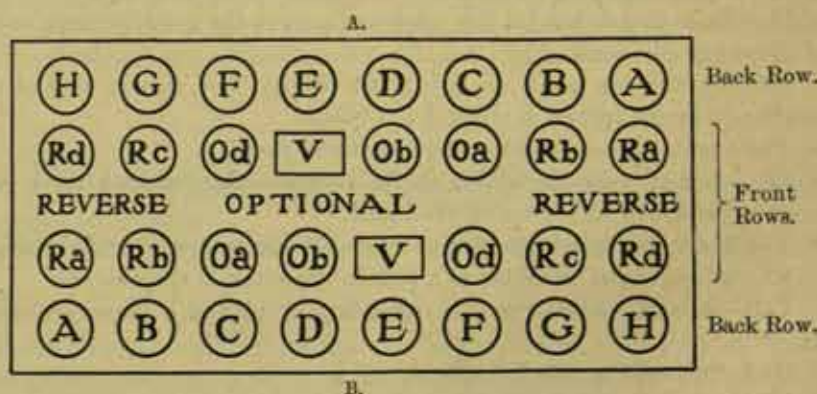


FIG. 1.—THE BOARD AND NOMENCLATURE.

The first two moves constitute the gambit and are always the same.

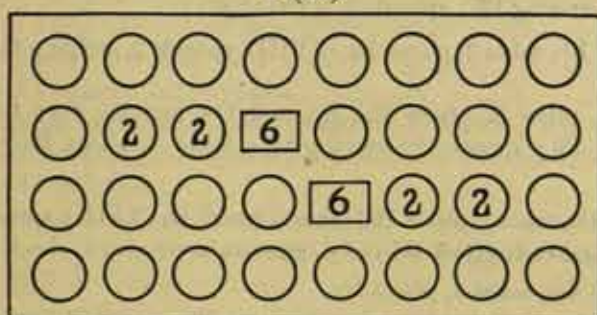
The first player "adds" one to the third hole from the right and spreads to the left, taking opposition in two holes. His opponent then adds one to the third hole from the right in his front line, takes the man in opposition, adds it to the other three and then spreads to the left. There is then opposition in three holes.

It will be seen that the second move is not according to rule, as the man taken should be placed at one end or the other, where it would "lie," the hole being empty.

The position is then as drawn (see Fig. 3).

Counting from the right B's 4th, 5th, and 7th holes are "in opposition." This should always be the position at the third move. A, the first player, having ten men on the board, and B twelve. Both players having twenty-one men in hand.

A (22).

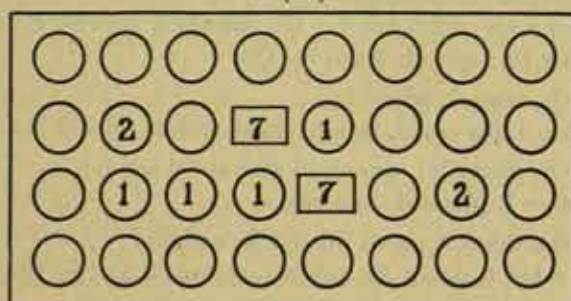


B (22).

FIG. 2.

The position for the start of a game :—

A (21).



B (21).

FIG. 3.

Specimen Game.

(1) A plays, adds 1 Od, spreads 3, arriving Oa.

B adds 1 Od, takes 1, places Od, spreads 4, arriving Rb = Gambit (see Fig. 3).

(2) A adds 1 to V, takes 1, and places it at Ra (Rule XII).

B adds 1 to Rb, takes 2 and places them at Ra and Rb (XII), arriving at Rb, spreads 3, arriving at V, takes 1, places at Ra (Rule XIX), spreads 2, arriving at Oa, spreads 3, arriving at Od and "lies" (Rule VII).

(3) A adds 1 to V, takes 2 and places them Rd-Rc (XII).

B adds 1 Rb (VI), takes 1 and places Ra.

(4) A adds 1 Rd (VI), takes 1, places (and arrives) Rd (XVII), spreads 3, arriving V (Rule XV, exception).

B adds 1 Rb (VI), takes 1 and places Ra (XVIII).

(5) A adds 1 Od (X) and spreads 2, arriving Ob (Rule XI).

B adds 1 V (VI), takes 1 and places Rd (XII).

(6) A adds 1 Ra (VI), takes 1, places (and arrives) Ra, spreads 3, arriving Ob.

B adds 1 V (VI), takes 1, and places Rd (XII).

(7) A adds 1 Rb, takes 2, places Ra and Rb (XVIII), arriving Rb; spreads 3 and arrives V, spreads 12, arriving Ra (XVI), takes 1, places Ra (XVIII), spreads 3, arriving

Ob; takes 11, places from Ra (XIX), arriving F (back row); spreads 2, arrives D; spreads 2, arrives B; spreads 2, arrives Ra; spreads 2, arrives Oa; takes 1 and places Ra (XIX).

B adds 1 Ra, takes 2, places Ra and Rb (XVIII), arriving Rb; takes 2, places Ra and Rb (XVIII), arriving Rb; spreads 5, arriving Re.

(8) A adds 1 Rb, takes 1, places Ra (XVIII), spreads 2, arriving Oa; takes 1, places Ra (XIX).

B adds 1 V, takes 3, places Ra, Rb, and Oa, arriving Oa; takes 2, places Ra and Rb, arriving Rb; spreads 2, arriving Ob; takes 1, places Ra (XIX); spreads 7 arriving Rd.

(9) A adds 1 Oa, takes 1, places Ra, takes 1, places Ra (XVIII), spreads 3, arriving Ob. B adds 1 Re, takes 6, places Rd to Oa, spreads 5, arriving C (back row).

(10) A adds 1 Oa, takes 1, places Ra.

B adds 1 V, takes 1, places Rd, takes 1, places Rd, spreads 3, arrives V; spreads 6 arrives B (back row); spreads 2, arrives D.

(11) A adds 1 Oa, takes 1, places Ra.

B adds 1 Re (X), spreads to right, arriving E.

(12) A adds 1 Ra, takes 1 and spreads, arriving Ob.

B adds 1 Ob, spreads right, arriving G; spreads 2, arriving E; spreads 2, arriving C; spreads 3, arriving Ra; spreads 3 and lies Ob.

(13) A adds 1 Oa, takes 1, places Rd.

B adds 1 V, takes 1, places Rd, spreads 2 and arrives Od and lies

(14) A adds 1 Oa, places Rd, spreads 2, arrives Od and lies.

B adds 1 Rb, takes 1, places Ra and lies.

(15) A adds 1 Od, takes 2, places Rd and Re and lies.

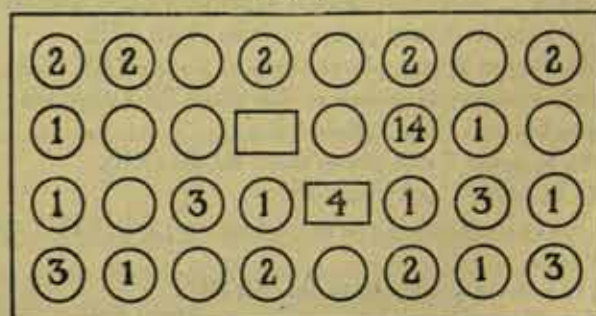
B adds 1 Rb, takes 1, places Ra, takes 1, spreads 3, arrives Ob; spreads 2, arrives Od and lies.

(16) A adds 1 Oa, takes 1, places Rd and lies.

B adds 1 Oa, takes 2, places Ra and Rb, spreads 8, arrives G and lies (see Fig. 4).

End of move 16 (five men in hand):—

A (5).



B (5).

FIG. 4.

(17) A adds 1 Rb, takes 3, places Ra, Rb, Oa, takes 1, places Ra, takes 1, places Ra, spreads 3, arrives Ob.

B adds 1 V, takes 1, places Ra, takes 1, places Ra, spreads 3, arrives Ob; spreads 2 and lies Od.

(18) A adds 1 Oa, takes 1, places Ra.

B adds 1 V, spreads right, arrives E.

(19) A adds 1 Oa, places Ra, takes 1, spreads 3, arrives Ob.

B adds 1 Rc, takes 5, places Rd-Ob.

(20) A adds 1 Oa, takes 1, places Ra.

B adds 1 V, takes 1, places Rd, takes 1, spreads 3, arrives V; spreads 3, arrives Rb; spreads 2, arrives A; spreads 4, arrives E; spreads 2, arrives G; spreads 3, arrives Rc; spreads 5, arrives Rb and lies.

(21) A adds 1 Oa, takes 2, places Ra and Rb.

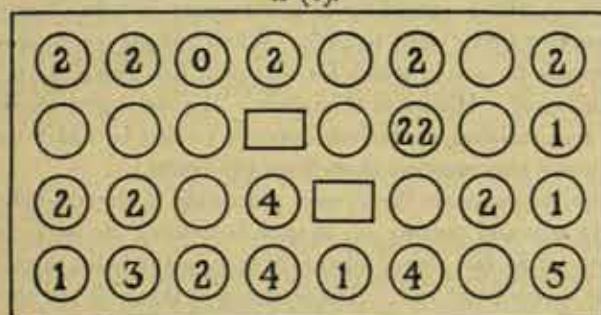
B adds 1 Rd, takes 1, places Ra, spreads 3, arrives V; spreads 2, arrives Oa; spreads 7, arrives E and lies.

(22) A adds 1 Oa, takes 1, places Ra.

B adds 1 Rc, takes 1, places Rd.

End of move 22 (none in hand):—

A (0).



B (0).

FIG. 5.

(23) A spreads Oa (22) left, arrives D; spreads 2, arrives F; spreads 2, arrives H; spreads 4, arrives V; spreads 2, arrives Oa; spreads 2, arrives Ra; spreads 4, arrives D and lies.

B spreads D left (4), arrives Ra; takes 2, places Ra and Rb, takes 2, places Ra and Rb, spreads 4, arrives Od and lies.

(24) A spreads G right (4), arrives Od; takes 1, places Rd, takes 5, places Rd to Ob takes 1, places Rd, spreads 4, arrives Ob; spreads 4, arrives A; spreads 6, arrives G and lies.

B spreads H (right, 5), arrives Ob; takes 2, places Rd-Rc, takes 4, places Rd. to V, spreads 2, arrives Oa and lies.

(25) A spreads B 4 left, arrives Oa; takes 3, places Ra to Oa, spreads 3, arrives Od; takes 1, places Ra, takes 4, places Ra to Ob, spreads 2, arrives Od; spreads 7, arrives D; spreads 3, arrives A; spreads 2, arrives Rb; takes 5, places Ra to V, takes 7 and wins ("amuna Bau").

NJOMBWA (YAO).

There are several different gambits for this game, which was played in every Yao village till ousted by "Bau."

The arrangement and numbers of the holes are the same as in Bau, i.e., 4 rows of 8 (occasionally 9 or 10).

In one game all the men are first put on the board, two in every hole, to "prove" the numbers. They are then removed and put into the hole at the left-hand end of the back row. Two of them are then put in the second hole from the left of the back row and one in the third. The position is then :—

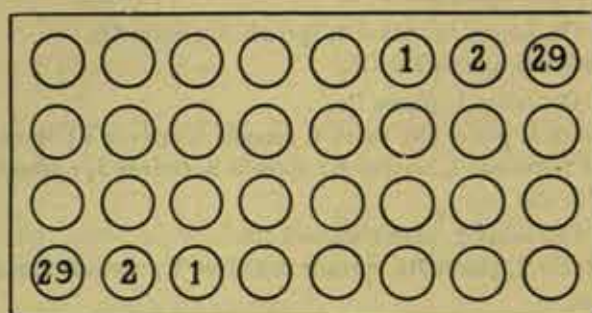


FIG. 6.

The first player then spreads the two men in the second hole from the left to the right (along the back row), arriving at the fourth hole from the left. His opponent does the same and they continue spreading in like manner, in turn along the back row and back along the front row (from right to left). When one player in spreading arrives at an empty hole opposite to one in which his opponent has a man, he takes the latter and removes it from the board. His move then ends. His opponent then spreads the two men he has left, and, arriving at the hole opposite to that in which the first player has two, he takes them and also removes them from the board.

The first player then spreads the 29 men remaining in the end hole of the back row, starting at the next hole and putting one in each hole along the back row and back along the front and so on, till he has placed all the 29 men in the holes, arriving at the sixth hole from the right in the front row. The contents of this hole are then spread and the spreading continues as in Bau till the player arrives at an empty hole. His opponent then does the same and on arriving at an empty hole his move also ends. This completes the gambit. The position is then :—

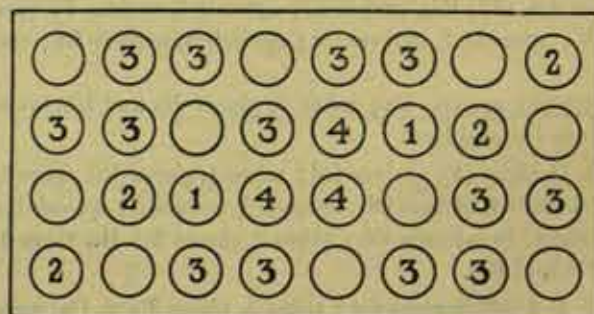


FIG. 7.

The game may also be played by putting *one* man in each hole to start with. The player then takes up the man in the *right-hand* end hole of the back row, adds it to the end hole of the front row, and spreads along the front row and along the back till he arrives at the last hole but one in the back row. He takes up both the men now in it and transfers them to the end hole (right-hand end). He then takes up the two men in the second hole from the right of his front row and removes them from the board, and his move ends.

The second player does the same and the gambit is complete.
The position is then :—

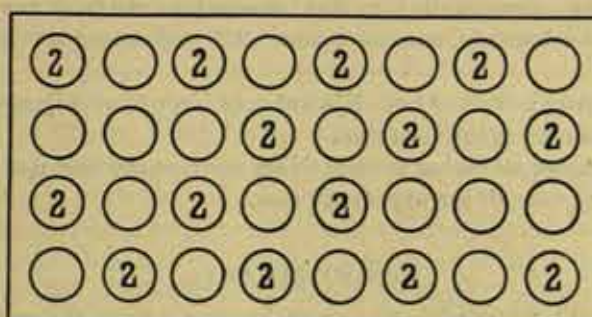


FIG. 8.

A third way of starting the game is to put two men in each hole except the left-hand end hole of the front row, which is empty, and the next hole in the front row, which has only one. (*Cf.* the *Msuwa* of the *Anyanja*.)

After any of these gambits the game proceeds in the same manner, though in the first there are 61 men on the board, in the second only 28, and in the third 29¹.

Men are taken from the opponent by spreading and arriving at an empty hole in the front row, not necessarily in one spread. The contents of the holes opposite to that arrived at, *both in front and back row*, are taken, and are removed from the board. The move then ends.

The spreading must always proceed from right to left in the front rows and from left to right in the back.

The move ends without taking if the player arrives at an empty hole not in "opposition." When a player is left with no hole containing more than one man he may move a "singleton" into the next hole, if empty, and, if such hole be in the front row and in opposition, he takes his opponent's man or men and removes it or them from the board.

At no period of the game can a man be taken from a hole in the back row if the corresponding hole in the front row be empty, though a man or men may be taken from a hole in the front row even if there be no man in its corresponding hole of the back row.

The game is won by taking all the opponent's men.

NCHOMBWA OR NSOLO (ANGONI).

Nsolo is played with a "board" consisting of ten, twelve, up to twenty holes, arranged in four rows. In consequence of the large number of holes, a "board" is always made by scooping them out in the ground on a convenient spot.

The number of "men" (usually pebbles) varies directly with the number of holes employed (76, 92, up to 156).

Two men are put in every hole except the (player's) right-hand end holes of the front row. As in *njombwa*, all moves must be in one direction only, *i.e.*, from right to left in the front row and from left to right in the back, and men are taken by spreading the contents of any hole or series of holes and arriving at an empty hole. The men in the opposite holes (front and back rows) are then taken as in the *Yao* game, but the

¹ *i.e.*, with eight holes in each row.

player can also take the contents of any one other hole (back or front row). No men can be taken unless a hole in the front row is first attacked. If there are no men in the hole of the back row corresponding to that attacked in the front row, the contents of the latter, and one other only, may be taken. All men taken are removed from the board.

"Singletons" may be moved as in Njomwba, i.e., only to an adjacent empty hole and when no holes contain more than one man.

A move ends either on taking or on arriving at an empty hole not "in opposition."

The object is to take all the opponent's men.

NCHUWA (ATONGA).

In this game the "board" is also made by scooping out the requisite number of holes in the ground, but it differs from Nchombwa in the numbers of holes. These are in four rows, as in the other games, but there are six, nine, twelve, or fifteen holes in each row. The number of seeds (machi) also varies with the number of holes (godi) (two for each), 48, 72, 96, or 120 being required.

The Bau board may be used by dispensing with two end holes of each row. The 15-hole game is, however, much the most interesting.

The Gambit.—Two men are put in each hole.

The first player takes up the two in the right-hand end hole of the front row, and puts one in the second hole and one in the third. He then takes up the two in the next hole and puts one in each of the next two holes, and so on till there are twice the number of holes having three in them as there are empty. The position being as drawn:—



FIG. 9.

The opponent does the same.

The first player then takes two men from any hole in the front row, and puts them in any empty hole in the back row. He then takes from his opponent the contents of the two holes opposite to that from which he moved the two men, and also the contents of any one other hole (back or front rows), and removes all of them from the board.

His opponent does the same.

This constitutes the gambit.

The game then proceeds exactly as in the Angoni (Nsolo or Nchombwa) game. (See p. 733.)

CHIANA (MANYANJA).

This is the most primitive of all the games, and is usually played by children. It is of interest in that it is, probably, the common ancestor of the more elaborate forms.

A "board," consisting of any number of holes, may be used. The play moves round and round the board, only the outside holes being used, always in the same direction, i.e., from left to right along the side nearest the player, and from right to left

along that nearest his opponent. There is thus no distinction of ownership between the sides of the board, only those holes actually occupied by his men belonging to a player.

The holes occupied by a player are always in series, and therefore only the last hole of such series can be moved. A move consists in spreading the contents of the last hole of the series as far as it will go, adding one man to each hole seriatim. Only one hole can be so spread each move, unless the move results in the two front holes of the series containing one and two men, respectively. It is evident that to do this it is necessary that there be a singleton in the front hole of the series, before the move, and a number of men in the last hole equal to that of the holes constituting the whole series. In this event, the player must continue to spread the last hole of the series until he fails to attain this arrangement of the two front holes of his series. If, in moving, he overtakes his opponent's series, he captures all those holes to which he has added a man; the hole next to (*i.e.*, in front of) the hole or series of holes, so captured, then becomes the last hole of the opponent's series, and is spread at his move.

In commencing the game, four men are put into every hole in the back row of each player.

A singleton forming one of a series, and occupying the last hole of such series, is added to the contents of the next hole, which, becoming the last hole of the series, is spread at the next move in the ordinary way.

If, however, the player be left with only one man, he may move it two holes each move, so as to enable him to overtake his opponent.

No men are removed from the board, in which particular Chiana differs from all other games, except Bau.

The game is won by capturing all the holes occupied by the opponent.

The game above described is called Chiana wa Kunja to distinguish it from another form, known as Chiana wa Bwalo, in which the players have each their own side of the board, a front and a back row, as in the other games.

The play is the same, except that men are taken from the opponent by occupying holes in the front row opposite to those in which the opponent has men, and that men so taken are removed from the board. It will be seen, then, that the latter game occupies a position intermediate between Chiana wa Kunja and other games, and represents a step in their evolution.

MSUWA (MANYANJA).

This game is very similar to the Nsolo of the Angoni; it is played with a similar number of holes. It differs in two particulars: in the first place there is only one man in the hole next to the empty right-hand end hole, at the commencement of the game; all others contain two as in Nsolo. The other point of difference is in the taking: thus, the contents of *two* other holes, either back or front row, are taken in addition to those in the two holes opposite to the hole arrived at.

MSUWA WA KUNJA.

This is a variation of Msuwa, and differs only in that no men are put in the front row at the commencement of the game. Two are put in every hole of the back row.

SPRETA (ACHIKUNDA).

One man in every hole of both rows, except the right-hand end hole of the front row, which is empty, and the third hole from the left in the front row, which contains two.

The hole containing two must be spread first. Men are moved and taken as in Msuwa.

SUTE (ACHIKUNDA).

As in above games, there are four rows of eight, ten, up to twenty holes.

One man is put in every hole, both rows, except the right-hand end hole of the front row.

Singletons are moved into an empty hole only, always, as in all these games, from left to right along the back row and from right to left along the front.

Men can be taken only from the back row hole opposite to the hole arrived at, and only if the corresponding hole of the opponent's front row be empty. Thus a player cannot take unless he is moving into an empty hole of his own front row facing an empty one in his opponent's; in which event he can only take the contents of the corresponding hole in the back row.

A player may move or take only once each turn.

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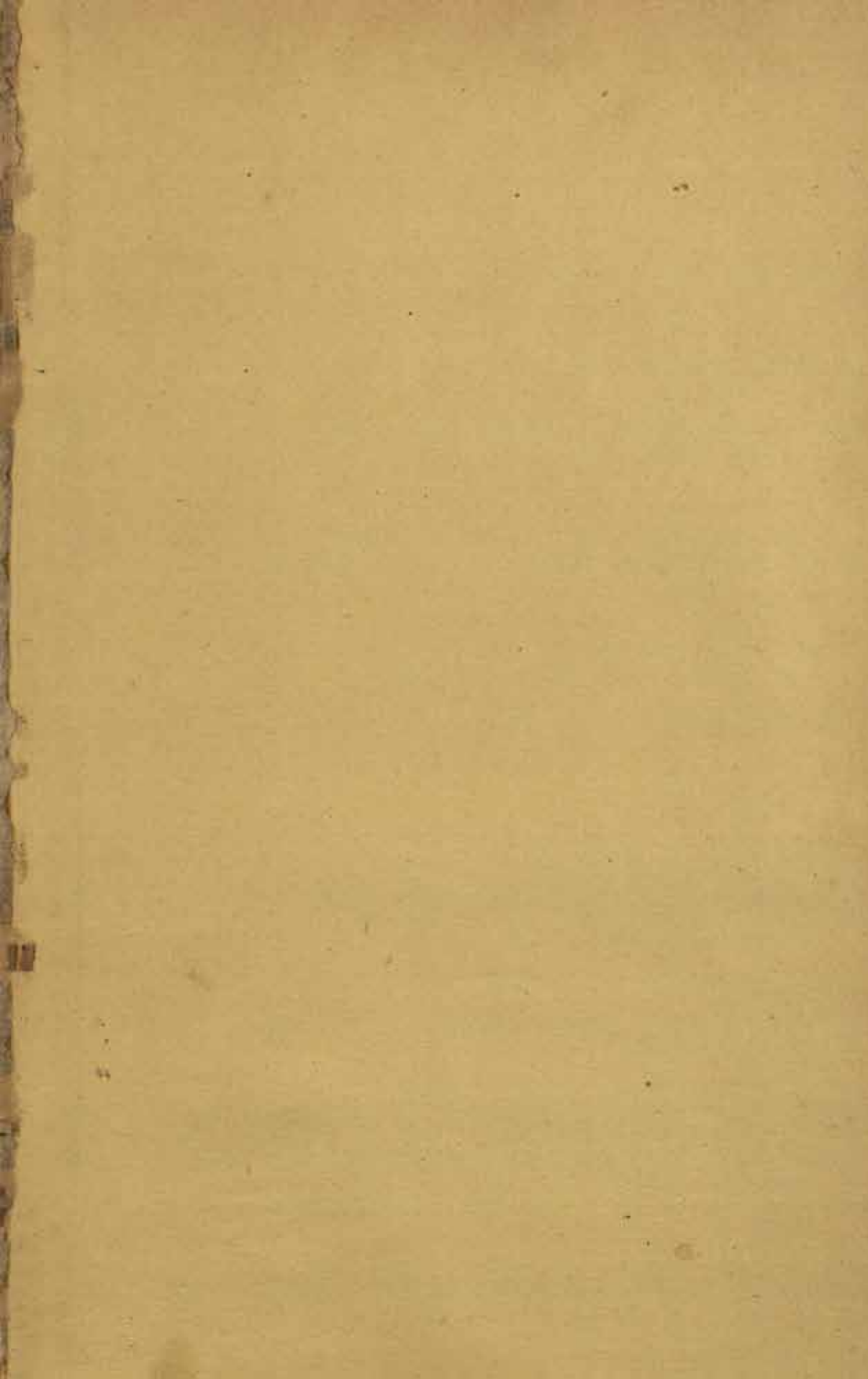
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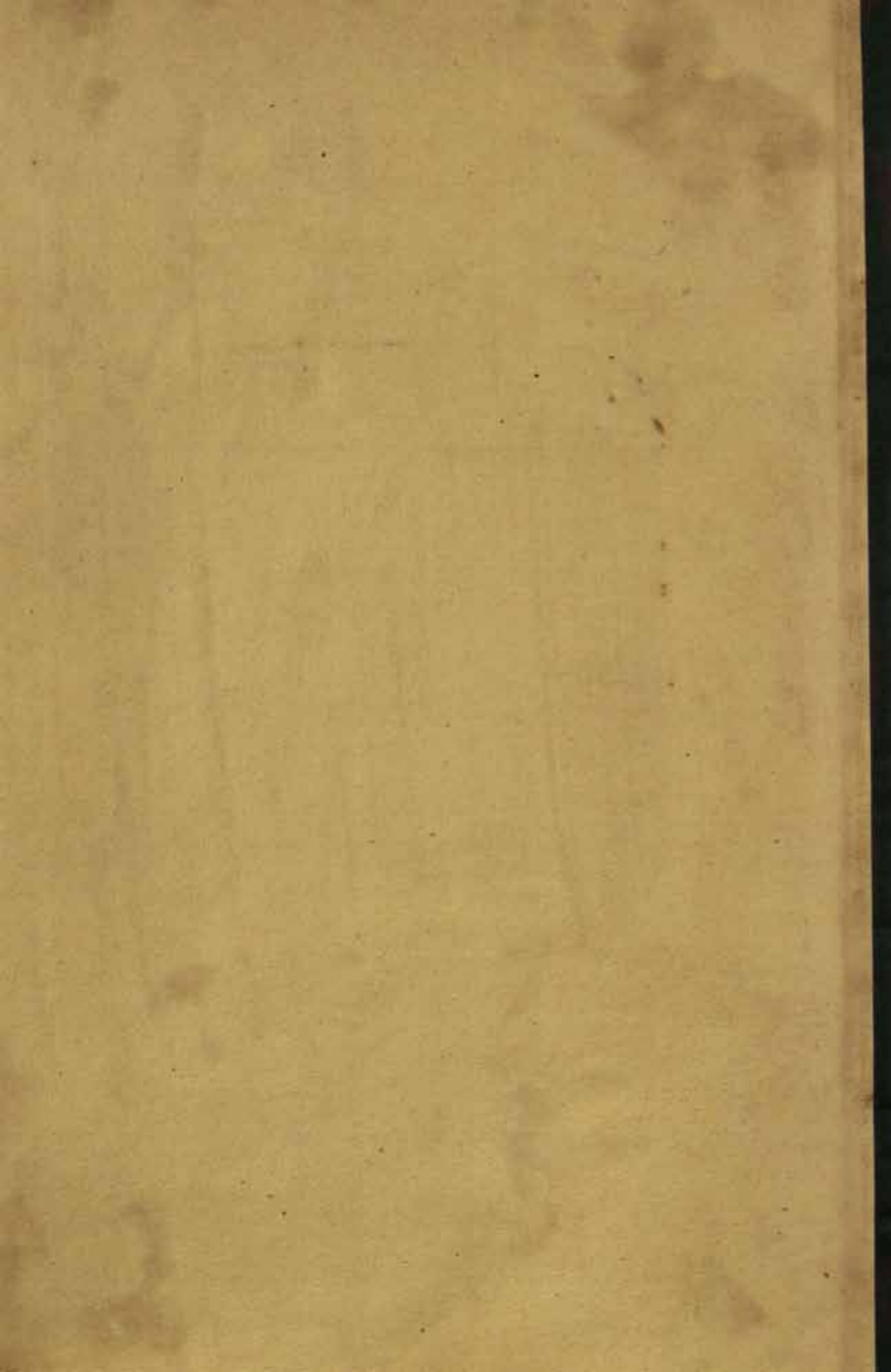
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